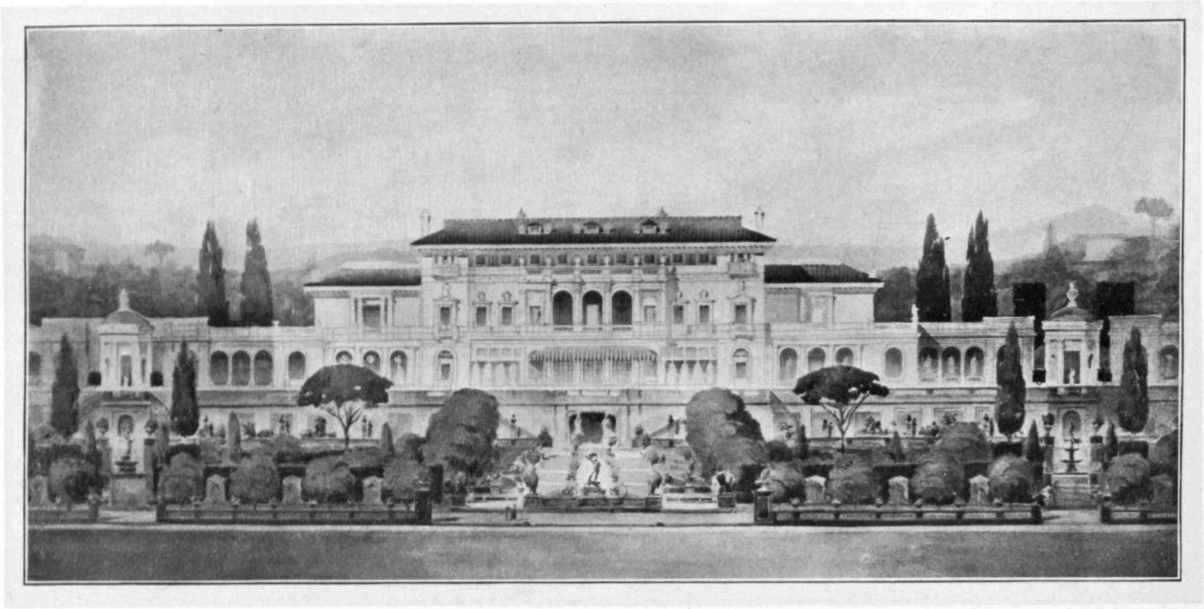

AMERICAN ACADEMY IN ROME COMPETITION

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SECOND ALL-TECHNOLOGY REUNION

Elaborate Plans for the Great Event, June 7, 8, 9
Inauguration of Dr. Maclaurin

As the plans for the Reunion of 1909 have been developed, the scope and importance of the convocation has broadened, and with the announcement by the Corporation that the inauguration of President Maclaurin will take place on June 7, the first day of the Reunion, it becomes an occasion of marked impressiveness and dignity.

The decision to hold the inauguration on the first day of the Reunion was only recently made, and announcement of the plans cannot be given out at this time. The ceremony will be held in Symphony Hall at eleven o'clock, and a committee, consisting of six representatives of the Corporation, three from the Faculty, and three from the alumni, will have charge of the exercises. There will be a notable assemblage of prominent educators and public men at the inauguration, and the various co-ordinate interests of Technology will be represented on the program. Dr. Maclaurin will be the guest of the Alumni Association throughout the Reunion, giving part of his time to the undergraduate functions and appearing at the principal features on the Reunion program.

As originally laid out, it was intended to have a general automobile excursion on Monday afternoon. The great interest, however, that is being shown in the Reunion indicates that the numbers to be accommodated will be greater than we can supply with cars, and it is necessary, therefore, to limit the invitations to this feature of the Reunion to visitors who live more than forty miles from Boston.

This is intended to be a courtesy to our visiting brothers, their families and visiting friends, and will not take on the nature of a parade. The cars will take the visitors through the suburbs of Boston by different routes, probably stopping at the Country Club for tea on the return to the city.

As a fitting termination to inauguration day, Governor and Mrs. Draper will receive the alumni at the State House from 8.30 until 10.

Through the courtesy of the house committee of the Boston City Club the upper floors of the club-house will be thrown open to the alumni at 9.30 on Monday evening for an informal jubilee smoker. The club house, which has been recently very much enlarged, offers ample accommodations for all the men who wish to come. This smoker is intended to be an informal social affair, and will serve as a sort of reception to the graduating class. There are several large halls on the upper floors of the City Club where there will be special Technology features, such as acts from the coming Tech Show, selections by the Glee Club, etc.

On Tuesday morning the professors will be in their departments ready to welcome old students who wish to call upon them. This has been a feature of graduation day for many years, and a great many men take advantage of the opportunity. Tuesday has been designated as the day of the classes. At noon the alumni will be transported in a body in two steamers of the Boston & Nahant Steamboat Company, of which Fred Wilson ('91), is president, to Nahant, where all the hotel accommodations have been engaged for the day. Nahant is particularly well suited for such an occasion. It is an hour's sail from Boston, is in an isolated location, and the hotels are convenient to the boat landing. It is intended to seat the men by classes and serve a hearty shore dinner at two o'clock. The classes can transact any business that may be necessary, and after dinner the men will mingle together in social intercourse or engage in some of the sports that will be provided by the entertainment committee. The day of the classes is a new Reunion feature, and it is believed it will be a most popular one. It is one of the few occasions where there is no prearranged program and where the men meet together without any restraint or formality.

There is ample room at the various hotels for 1,500 or 2,000 persons.

Returning to Boston about five o'clock, the men will dine at pleasure, rendezvous by classes, and march to Symphony Hall as usual. The Pop Concert on Tuesday evening will be a brilliant one, special features being arranged by the committee to make it a memorable occasion. At the close of the concert, the men will march in a body down Boylston Street and cheer Rogers Building, which will be outlined in red fire.

The culminating events of the Reunion begin on Wednesday with the excursion to Nantasket. The two steamers which have been engaged will leave the wharf of the Nantasket Steamboat Company at ten o'clock, and on arrival at Nantasket, the alumni will assemble by classes on the beach and march to the Atlantic House, which will have been completely transformed and enlarged by means of canvas additions and tents. A buffet luncheon will be served on arrival, and, although there will be nearly double the number of guests that were present at the excursion five years ago, ample arrangements have been made to feed the multitude without discomfort. The Atlantic House is, fortunately, conducted by a Tech man, J. Linfield Damon, Jr. ('91), who made an excellent record for the house at the last Reunion.

After luncheon the stunts will be run off in the arena in front of the hotel. As the excursion to Nantasket will be held rain or shine, there will be an immense tent erected over the arena, and, in order to accommodate the larger number of guests who will be present this year, the veranda will be widened for half the length of the hotel, and on the other side of the arena will be erected a grand stand, capable of holding 1,200 people. The stunts will be of a very novel and ludicrous character. Every class will have some kind of an entertainment to offer. The older classes will come first, and there will be a time limit given each class in order that we may be sure to leave for Boston on schedule. Most of the classes have already appointed committees of arrangements for the Reunion, which also have charge of the class stunts. The stunts that made the biggest hit with the crowd at the last Reunion were those that were snappy and impromptu, that utilized all the members of the class and that

were run off quickly. The stunt program is unique to Technology, and its success five years ago was largely due to the fact that we did not call for elaborate machinery or high-priced costumes to amuse the crowd. Some features that have already been reported to the committee are infinitely ludicrous. Acts that are registered with the committee can be claimed as the property of the class first making claim.

The excursion boats will leave for Boston about five o'clock, and in the evening will occur the grand Reunion banquet. This will be held in Symphony Hall, which will be elaborately decorated for the event. This dinner will be the crowning feature of the Reunion, and it is expected that there will be 1,000 persons at table. The speakers will be men of international reputation, and there will be an opportunity for guests to hear the speeches from the gallery seats. The dinner will be served by one of the most capable stewards in New England, a man who is noted for excellent dinners served on unusual occasions such as this. The cooking will be done in Symphony Hall, it being necessary to install ranges, steam tables, etc., as well as a temporary steel stack outside the building. This is only a general outline of the program. The incidental divertisements, which add so much to festivities of this kind, are now being worked up by special committees.

The program for the women will be very complete. In fact, everything on the list of events is open to them except the day of the classes at Nahant on Tuesday afternoon and the jubilee smoker on Monday evening. On Tuesday afternoon Mrs. Edwin S. Webster will give a reception to the ladies at her residence at Chestnut Hill. There will be a special committee of women, with headquarters in the Margaret Cheney Room, Pierce Building, Trinity Place. Fraternities and societies desiring to be together will have no better time than at breakfast on Tuesday or Wednesday.

Tickets admitting to the various functions will be sold as follows: jubilee smoker, City Club, $1. This includes refreshments. Day of the classes, including transportation and dinner at Nahant, $2. Pop Concert, $1.50. Excursion to Nantasket, including luncheon, $3. Banquet at Symphony Hall, $4.

It has been decided by the committee to sell combination tickets including all these festivities for $10.

The committee on hospitality, headquarters and registration will have its headquarters at the Tech Union, where there will be all sorts of conveniences for visitors. There will be clerks on duty at all times to make out registration cards, give out badges and furnish information. A handsome identification badge has been selected, giving the name and class of each person, and the registration cards will be immediately written up, so that the file will be complete within a few minutes of the time the guest registers. The Naval Architecture drawing-room will be given over to the classes, a desk being provided for each separate class, where members can meet if they desire. There will be writing materials, free telephones, messenger calls, time tables of all railroad, steamboat and trolley lines in and about Boston, maps of the city and suburbs, etc., and a check-room for the convenience of guests.

All the events will take place rain or shine, except the automobile trip. On the day of the classes the men will be under cover practically every minute from the time they leave Boston to the time they return, as the hotels at Nahant are only about three minutes from the boat landing. In case of rain or heavy weather there are plenty of bowling alleys, shooting galleries and billiard tables for amusement.

It will be observed from the above program that there is little chance for classes to get together by themselves during the Reunion. There will be an opportunity, however, for classes and fraternities to meet for breakfast on any one of the three days or for a limited time at dinner on Monday and Tuesday evenings. Osiris has arranged for its reunion on Tuesday at breakfast, and the reunion of Tech editors will probably take place on Wednesday morning at breakfast. Most of the five-year classes having anniversaries this year will get together on Friday, Saturday and Sunday, or for a shorter period of time previous to the Reunion. This not only is true of the five-year classes, but several other classes have arranged to get together on Saturday and Sunday, or for Sunday only, thus making the Reunion an unusually social affair. It is likely that a

dozen or fifteen classes having no anniversary this year will at leas spend Sunday together at some hotel or summer resort near Boston

It has become plainly evident to the committee that, in order to properly take care of the immense numbers that are sure to pour into Boston for this Reunion, we must know as definitely as possible how many we are likely to expect, in ample time to make provision. In talking the matter over, it has been clearly shown that the facilities at some of the events are likely to be limited, and the committees are not warranted in spoiling the pleasure of the majority for the late comers for whom provision has not been made. Within a very short time, information relative to the Reunion willl be sent to all former students of the Institute, accompanied by a return postal card to indicate the intention of the person addressed without necessarily committing him. We are very desirous of having every man fill out this blank, in order that we may make proper preliminary arrangements. About the middle of May the final subscription blank will be sent out, which will make definite reservations for the different events.

The committee in charge of the Reunion consists of Edwin S. Webster ('88), chairman, of the firm of Stone & Webster; Dr. Arthur A. Noyes ('86), Acting President of the Institute; Hon. Eben S. Draper ('78), Governor of Massachusetts; George W. Kittredge ('77), New York city, chief engineer of the New York Central Railroad; Theodore W. Robinson ('84), Chicago, vice-president of the Illinois Steel Company; Walter B. Snow ('82), publicity engineer; Everett Morss ('85), president Simplex Electrical Company; Henry Howard ('89), vice-president of the Merrimac Chemical Company; and I. W. Litchfield ('85), secretary.

Chairmen of committees: committee on hospitality, headquarters and registration, Professor C. F. Park ('92); committee on decorations, Professor H. W. Gardner ('94); committee on governor's reception, Professor William T. Sedgwick; committee on jubilee smoker, John A. Curlin ('92); committee on the day of the classes, Franklin T. Miller ('95); committee on the Pop Concert, Leo Pickert ('93); committee on harbor excursion, F. H. Fay ('93); committee on banquet, C. C. Peirce ('86).

HOW THE STUDENTS ARE ORGANIZED

The Institute Committee and its Relations to All Student Activities—Student Business Office Opened

The prominent part that the Institute Committee has recently taken in undergraduate affairs has called much attention to it among the alumni. I have been asked to say something about its organization and its accomplishments.

The Institute Committee or students' council, which was organized about 1893, was originally composed of the president and two elected members of each class. The committee was self-appointed, and its duties were vague, it being generally understood that it exercised general oversight over undergraduate affairs and represented the students in their relations with the Faculty. The work done by a committee of this sort, having no definite duties, depended largely upon the initiative of the presiding officer, and, as the president of the senior class has always been president of the Institute Committee, he has not been able to give much time or energy to the work.

At first the Institute Committee carried out a useful purpose, but latterly it became inactive and was something of a joke to the students, who said the only real business the committee did was to sit for its picture for the *Technique* once a year. Last year an attempt was made to revivify this organization and make it more representative by adding to its membership the presidents of the course societies, the editor-in-chief of *The Tech* and *Technique*, and the general manager of the Show. The year's experience undoubtedly proves that this was a well-advised move, for it has added to the working force of the old committee, brought into the deliberations of the committee undergraduates who have had the most practical experience, and the work of the committee has had far greater scope and has been more thoroughly done. The addition of these men raised the membership of the committee to twenty-

six, and, as this was too large a body to discuss detail work, an executive committee of five was chosen, who have general oversight of the committee's work and who prepare matters for its consideration.

This organization, with its large representative committee and its small executive committee, allows us to give attention to details and at the same time makes the body deliberative and permits of handling larger questions from a many-sided point of view. The most important piece of work which has been completed by the Institute Committee this year was the adoption of the point system controlling undergraduate office-holding, which is described by Mr. Scharff elsewhere in this magazine. Another important work was the regulation of bill-boards, which was given over to the committee by the Faculty. Previous to this year the hallways of the different buildings were made hideous by posters of all sorts and conditions, posted in the most flimsy manner, and many of them days or weeks out of date. The committee has put up in every building new bill-boards, which are under the supervision of a special sub-committee and are governed by a few simple regulations.

During the last few years the volume of work connected with the different student activities has grown to such an extent that it became a burden on the few men who were carrying the large share of the work. The amount of business done can be better understood, perhaps, from the statement that the students handle altogether from $25,000 to $30,000 a year. Of necessity there is connected with so much business a great amount of detail work, which, it is found, takes more time from regular Institute work than the social activity itself. This resulted in slack business methods, often producing losses and sometimes failures, and in lower scholarship, sometimes resulting in the loss of degrees.

Some time ago one or two of the activities studied the real conditions, and decided that the most practical relief would be to have their work done by the alumni office, which had been kindly placed at the disposal of the students for such purposes. The chief objection raised to this scheme was it would add more expense to the activities than they would be able to carry. The plan was tried,

however, and its success was shown by the ever-increasing volume of work done by the alumni office for the undergraduates. The amount of clerical work that can be done for a small amount of money has surprised those that have made use of the office and prepared the minds of the men for the plan of co-operation which came later.

When the offices of the undergraduates were moved from Rogers Building to the Union, the alumni office was found to be very inconvenient to use for this clerical work. The need of an office in the new Union was canvassed, and about the middle of the year plans were completed for establishing such an office, supported entirely by the students themselves under the management of the Institute Committee. A man was secured to do book-keeping, typewriting, and stenographic work for the different activities, as well as for any student who needed his services. This man has now been employed for a month, and his work has been increasing so much each week that, if the present increase continues, it will be necessary to employ an assistant next year.

The outcome of this closer organization among the various student interests has led to interesting and profitable discussion and to plans for closer co-operation. There is now under way a movement to bring the different activities together in such a way as to prevent any individual loss or gain. The amount of money made in any one of them is not ordinarily large. It is oftener the case that there is a deficit at the end of the year, and the students who have been doing the most work in order to carry the activities along are the ones that are called upon to make up the deficit, although all the students are equally intererested. There is no doubt that, with the oversight and experience that can be made useful by the close relationships now possible in the Institute Committee, each activity can be conducted with less liability of loss and with greater possibility of gain than without such co-operation. There seems to be no reason why most of the activities should not make money each year, and that definite appropriation can be made from this profit to take care of the other interests that cannot from their very nature show gain. The scheme proposed is to give

the general responsibility of oversight to the Institute Committee, which shall audit the books of each activity once a month and give any assistance or advice which may seem necessary.

The needs of the Institute Committee for the future seem to me to lie in two directions. The custom of having the president of the senior class also president of the Institute Committee puts more work on one man than he should be asked to carry. I believe that the presidency of the Institute Committee should be a separate and distinct office, which is undoubtedly the most important position to be filled by the students. The second thing that we need is a greater common purpose between the alumni and the undergraduates. This may be accomplished by the Alumni Council electing a committee of three to act as an advisory committee to the Institute Committee. This would give the latter the point of view of more mature advice in their larger undertakings; and would make a very important connection between the alumni and the undergraduates.

The committee has already been benefited by the friendly advice of individual members of the Association. If such advice could be given an acknowledged place in the affairs of the committee and if the men appointed were heartily interested in bringing the students and the alumni closely together, it would seem as though the new plan already begun would work out in a most ideal way.

JAMES H. CRITCHETT, '09.

Committee on Inauguration.

As the REVIEW goes to press, we learn of the appointment of the following committee to arrange for the inauguration of Dr. Maclaurin on June 7: From the Corporation,—Colonel Thomas L. Livermore, George Wigglesworth, James W. Rollins, Jr. ('78), James P. Munroe ('82), Arthur T. Bradlee ('88), and Frederick P. Fish. From the Faculty,—Professor Henry P. Talbot ('85), Professor Arlo Bates, and Professor Harry W. Tyler ('84). From the alumni,—Edwin S. Webster ('88), Arthur D. Little ('85), and Walter Humphreys ('97).

THE OPERATION OF THE POINT SYSTEM

How it works out in Actual Practice—Its Influence on Scholarship and Student Interests

Now that the Point System has been in operation throughout the greater part of a year, a brief inquiry into its effects and into its promise for the future will not be out of place. Sufficient time has not yet elapsed for a thorough trial of this interesting experiment in student self-government, nor is sufficiently complete data at hand to show statistically the improvements already effected in the conditions at which the Point System was aimed, but no one who has been intimately connected with the various student activities during the year can help being impressed by the changes that have taken place and by the strong sentiment that has grown up for further improvements along these lines. It is the purpose of this article to point out these changes and to call attention to this growing sentiment.

During the year a number of changes have been made in the plan as originally outlined, as was to be expected with a scheme drawn up entirely *a priori*. These changes have been principally in raising or lowering the rating of various offices, as new experiences or conceptions have convinced the Institute Committee that they were originally placed too low or too high. The result has been a gradual adaptation of the plan to Institute conditions, so that the scheme is better and much nearer to the permanent form it will finally assume than when it was originally adopted. But this state of change has been a more or less unstable condition, so that the scheme has been unable to realize in this short period all the good of which it will ultimately be capable.

Nevertheless, in every department of student activity the Point System has struck at a fundamental error, and has accomplished something. As typical of conditions throughout the Institute, it

may be well to consider those in the junior class, which always takes a leading part in undergraduate life, and in which the abuses at which the Point System was directed have been, perhaps, most common. Taking for comparison, in various years, the twenty-eight offices in the gift of the junior class, including executive offices and positions on the Technique Board and the Prom Committee, we find these distributed in the class of 1906 among 19 men, in 1907 among 22 men, in 1908 among 19, in 1909 among 21, and in 1910, under the Point System, among 23 men. While the contrast here is not very sharp, it is, nevertheless, significant, and the good effects of the scheme become much more apparent when, leaving out the less important positions, we consider those offices carrying with them a considerable amount of labor. Thus in 1906 3 out of 5 members elected to the Prom. Committee were also on the Technique Board, in 1907 3 out of 5, in 1908 4 out of 5, and in 1909 4 out of 6. This continued in spite of the fact that each year demonstrated more and more clearly the impossibility of doing full justice to the duties attached to each of these positions and at the same time maintaining a good record in scholarship. Under the Point System none of the 5 members of the Prom Committee elected from the Class of 1910 were on Technique, and, as a result, both of these important junior activities are proceeding without being hampered, as heretofore, by the presence of members too busy to do their share of the work.

These instances are only typical examples of what is true throughout undergraduate activities, and might be multiplied indefinitely. Everywhere it is plain that the Point System is distributing student offices more and more generally, interesting more and more students in undergraduate activities, and preventing the burdening of a few men with the duties that should fall to several times their number.

That a strong sentiment for the idea of office regulation has grown up, and is still growing, cannot be doubted by any who have attended meetings of classes, clubs and committees during the year. It has become more and more common for nominations to be scrutinized with a view to learning what other duties the nominees have, and even among clubs of purely social nature, in numerous instances,

secretaries, treasurers, etc., have been chosen by preference from among those who were otherwise free from official duties.

In this sentiment there is great promise for the future. As the tendency grows stronger and stronger, more and more men will inevitably be drawn into active participation in student life, management by men who have time to perform their duties satisfactorily will raise the tone of every department, and eventually the Point System will achieve accomplishments beside which the improvements of the present year will appear insignificant.

MAURICE R. SCHARFF, '09.

Death of Major Zalinski

The alumni of the Institute who were here from 1872–76 will regret to learn of the death of Major Edmund Louis Grey Zalinski, who was military instructor at the Institute at that time and who made a great impression on the men who came under him. Major Zalinski died on March 10, at the age of sixty years. He was best known for his development and interest in the pneumatic dynamite torpedo gun, which uses pneumatic power in lieu of explosive and throws a torpedo projectile weighing 100 pounds, charged with 500 pounds of high explosives. Major Zalinski was born in Russia-Poland, and came to this country when he was four years old. He entered the army in 1864 as volunteer aide-de-camp to General Nelson A. Miles, remaining until the close of the war. He then entered the regular army with the 5th United States Artillery, serving as professor of military science at the Institute, and afterwards he was graduated from the Fort Monroe Artillery School and the Willets Point School of Submarine Mining. In 1890 Major Zalinski made an official trip through Europe, visiting nearly every country and studying methods of warfare, and later visiting South America, Japan and China on the same errand. On his return he was retired from the army with the rank of Major in April, 1904.

INCREASED ATHLETIC INTEREST

Fencing Team Undefeated—Track Team within 2-5 Seconds of World's Record—Technology Admitted to I. A. A. A. A.

With the closing of Tech Field, which always takes place immediately after the annual contest between the two lower classes known as Field Day, there begins what might be called the indoor season of athletic activity, There has been an unusual amount of participation in the minor sports during the winter, and the results of the various contests which the Institute teams have entered show a corresponding rise in the standards of our ability in these directions.

The most successful of the Technology teams is the fencing team, which is thus far undefeated, with but one more meet to face, the intercollegiates at New York on March 27. The teams they have defeated and the respective scores are as follows: December 5, Boston Y. M. C. A., 1; Technology, 8. December 12, Fenway Studios, 2; Tech, 7. February 24, Columbia, 2; Tech, 7. March 7, Springfield Training School, 1; Tech, 10. March 13, Yale, 12; Harvard, 2; Tech, 13. The last meeting was the preliminary round of the intercollegiate meet, the two high teams qualifying.

On December 22 the annual championship of the Institute was won by H. G. Knox ('10), a graduate of the United States Naval Academy and the mainstay of the team. Mention should also be made of the good work of Captain V. C. Grubnau and E. M. Loring, the third member of the team.

The basket-ball team gave promise at the first of the season of unusual brilliancy, defeating the Dartmouth, Williams and Harvard teams in succession. On the annual trip, however, this record was not maintained. A series of accidents, serious enough to make it necessary for the best players to give up the game for some time, resulted in the bad defeat of the team by Wesleyan, College of the City of New York and New York University in four nights,

one victory, over Manhattan College, being insufficient to prevent the demoralization of the team, and a loss of form from which they have not been able to recover. Captain Wentworth and Parker played the best game for the Technology team.

The hockey season, shortened considerably by the open character of the winter, has been on the whole very successful. Of the six games played the team won four and tied one. The good quality of playing done by the team is shown by the awarding of the insignia, the letters "hTt," to five men,—Pain ('09), Gould and Taylor ('10), Gould and Bakewell ('11) and Sloan ('12).

The indoor season of the track team began officially on December 12. The first event of the new year was the relay contest arranged between teams representing the different courses of instruction in the Institute. This is one strong indication of the growing interest in athletics among the undergraduates.

On January 8 the annual indoor interclass meet was held, the juniors winning handily. Three Institute indoor records were broken, those for the quarter and one-mile runs and the pole-vault.

At the Boston Athletic Association Games, held on February 6, the one-mile relay team easily outran that from Syracuse, making the fastest time of the meet, and E. Stuart took second place in the high jump, clearing an actual height of 5 feet, 10 inches.

Two weeks later we lost to Columbia and Harvard in New York. This was attributed by many to the fact that the track was of a widely different type from that on which the men were accustomed to running. On the same evening our two-mile team won from Tufts at the Lawrence Light Guards meet in Medford, and a week later the one-mile team won from Wesleyan at Troy, breaking the intercollegiate record and coming within 2-5 seconds of the world's record. The members of this team are Fernstrom ('10), Moses, Salisbury ('11) and Gram ('09), track captain for the coming season.

The annual fall handicap run was held December 5. Howland won very handily from scratch, breaking the record made several years ago by E. H. Lorenz. The present mark for the eight-mile course is 46 minutes, 23 seconds. A significant feature of the race was the participation in it of eleven freshmen.

In the intercollegiate cross country meeting at Princeton our men finished 8th, 19th, 22d, 24th and 27th, which would have given us second place. We did not, however, receive any score, as we were not members of the association, and ran only through the courtesy of its officers. The spring season began on February 20, with a large and promising number out, and the prospect of a strong team later in the year.

By establishing a rule that only such members of the first-year class as took part in some regularly organized branch of athletics might be excused from the compulsory gymnasium work introduced this year into the first-year requirements, the Faculty has not only taken official cognizance of our sporting events, but has given them a very appreciable impulse. It is to be hoped that some day this requirement will be extended throughout the entire four years of the course.

'Varsity baseball was the subject of considerable agitation early in the year. The project was abandoned, however, and wisely. We are not yet ready for more than one 'varsity team in the major sports, even though there is considerable interest among a certain number in this subject every year.

One team, which, although not new, is coming into notice for the first time this year is the Gym Team. On March 16 they had a meet with Amherst, in which very excellent work was done by all concerned. Further growth may be expected in this direction now that the freshmen are required to take physical training.

An additional incentive to participation in athletics is given by the establishment of four new trophies for annual competition by members of the Alumni Association. These are the J. L. Batchelder one-mile cup, the J. A. Rockwell quarter-mile cup, the Benjamin Hurd high hurdles cup and the F. H. Briggs "all-'round" trophy for the man scoring the highest total number of points in the spring meet. Through the generosity of these graduates, provision has been made for replacing the cups each year by their duplicate or equivalent, so that the winner of the trophy each year is the permanent holder of it.

The last item to be mentioned is the admission of the Institute

to the Intercollegiate Association of Amateur Athletes of America. This is the body in control of the annual games at which the inter-college championships are decided, and in which all the major colleges are members. In becoming a member of this organization, the Institute has a new field of effort opened up to it. Here our first-class athletes—and they're becoming more common than they were—can compete with men from colleges which have always considered themselves invincible, and success will reflect great credit on Technology.

There are indications now that we may make a very creditable showing next May, when we first appear in that company.

H. A. RAPELYE, '08.

Mrs. Rogers' Birthday

On the 4th of March Mrs. Rogers, widow of the first President of the Institute of Technology, celebrated her eighty-fifth birthday by an informal tea at her house, 117 Marlborough Street. No invitations were issued, but her many friends, especially from the Institute, called to offer their congratulations and to express their pleasure that her intellectual youth and vigor are matched only by that of her own Technology.

From November until May of each year Mrs. Rogers occupies her Boston house, and is active in many philanthropies, in attendance upon all that is best in music and literature, and especially in following with keenest interest the affairs of the school which is her husband's noblest monument.

The summer months, when she is not abroad, are spent in Newport, at "Morningside," on Gibbs Avenue, built by President Rogers and herself in 1872.

It is the fervent hope of every Technology man that the Institute may have the beneficent influence of her beautiful personality for many years to come.

AN OUTPOURING OF ALUMNI

Annual Banquet breaks All Records—Enthusiastic Welcome to President-elect Maclaurin

A year full of great promise for Technology was ushered in on January 14 by the annual alumni banquet at Symphony Hall, which was record-breaking in point of numbers and interest in the annals of the Association.

Every available square foot of space in the large exhibition hall was filled when the graduates marched in to the accompaniment of the undergraduate orchestra. The foliage of tropical plants banked the walls, relieved by cardinal and gray banners and decorations, and with class panels which encircled the hall. Behind the speakers' table, amid a bank of palms, was a bust of President Rogers, encircled by a wreath lit up by electric lights.

Standing in their places, the members of the forty graduating classes present sent up a mighty cheer for Technology, and the Institute Glee Club, massed on the steps, led a lusty song for "Dear Old M. I. T." At this point the lights were extinguished, and hearty cheers were given for Technology, Noyes, Maclaurin, as the names successively appeared in electric lights above the heads of the Glee Club.

Enthusiasm ran high during the dinner, the old cheers of past years mingling with the catchy class yells of the later classes, many of them based on local hits or bringing into prominence some favorite son. Between the courses the Glee Club led in singing the old songs; and, when the orchestra began the introduction to the favorite Stein Song, the assemblage rose and the response from half a thousand throats awoke the echoes of the vaulted ceiling.

A weird ceremony was introduced in the bringing in of the ices, when the lights were again extinguished. The long line of waiters bearing the dishes illuminated with red and gray lights was led

by two Scotchmen in Highland costume, playing a Scottish national hymn on what Dr. Maclaurin calls his "national weapons," the bagpipes. The pleasure of Mrs. Maclaurin at this part of the proceedings was evident to all.

At one point in the program the Glee Club, grouped in front of the speakers' table, sang the new song, "Alma Mater, Technology," under the leadership of its author, Clinton W. Kyle ('09).

The dinner was a welcome to the President-elect, Richard Cockburn Maclaurin, but it carried with it grateful recognition of the services of Acting-President Arthur A. Noyes ('86), and its enthusiasm and success was a happy portent of greater events of the year to follow.

President Walter B. Snow ('82), of the Alumni Association, acted as toastmaster, and besides Dr. Maclaurin and Dr. Noyes the list of speakers comprised Governor Eben S. Draper ('78), Dr. Robert S. Woodward, president of the Carnegie Institution, and Edwin S. Webster ('88), the new president of the Alumni Association.

President Snow spoke of the tremendous increase of interest in Technology affairs, brought about by the reorganization of the Alumni Association, in such a way that it will become an important factor in the further advance of Technology. He stated that five alumni associations had been formed during the past year, making a total number of twenty-five. "Do you realize," he said, "that this Association numbers about 4,500 members, and there still remains nearly an equal number of potential members, the non-graduates, who, standing shoulder to shoulder with us who happened to graduate, are doing the work of the world,—who are making names for themselves and who are worthy to be with us in this Association? The Association stands open for their admission with practically all the privileges which pertain to active membership." Mr. Snow then introduced Governor Draper, who spoke as follows:—

I am extremely glad to be here this evening in my official capacity to extend the welcome of the Commonwealth of Massachusetts to your new President. The Commonwealth of Massachusetts has always been in-

terested in education. Her standard has been high; and we believe, speaking as men of Technology, that in the selection that has been made the average of the great institutions of this Commonwealth will be raised higher than it ever has been before. We welcome him for what he has done and for what we expect he will do. It is peculiarly pleasant for me that the first great meeting of this kind which I have attended since I have been the Governor of this Commonwealth should have been connected with the Institute of Technology.

In coming here to-night, I assure you that I have been tremendously impressed by this gathering. I remember the Institute in a very different day from this. We could not have had any such alumni meeting as this in my time. There were only forty-four men in my class, and now you have substantially ten times that number in an entering class. The Institute has grown enormously, not merely in numbers, but in influence and in the respect of all educated men in this country.

You have serious problems before you as members of the Alumni Association, and the President of this Institute is not coming to a holiday task. Whatever the men of the Institute may have been in the past, they have not been afraid of work. If they had been afraid of work, they would never have been members of the Alumni Association. And the fact that you and he have serious problems before you does not daunt you, I am sure, but is simply an incentive to greater effort.

If the Institute is to maintain its place in the future, and advance as it should advance, I believe it must do it by maintaining its standard as high as it has been, aye, even higher in the future than it has been in the past. I don't believe the Institute wants to lower its standard in any way for the sake of getting more pupils or for the sake of competing with other educational institutions.

At this time it seems to me that the greatest question for consideration in the Commonwealth of Massachusetts is the question of education. I have had something to say about this very recently which, I am happy to see, has met with the approval of some people. I presume it has met with the disapproval of others. But, in any event, I have expressed my honest opinions, and I am not in the habit of running away from them.

This question of industrial education is to my mind one of the most important that has arisen in any state, and especially in our state in recent years. And, while I tried to point out the other day my idea of the differences between industrial education and the ordinary common school education, we don't want to get any idea into our heads that industrial educa-

tion is the education that a man gets at the Institute of Technology. There is just as great a difference in my mind between the education which should be given by this institution and what I believe to be ordinary industrial education as there is between industrial education and the common school education. And I believe that this Association can have no more important work in the future, save one, than for its members to devote themselves, as educated men, to helping the people of this Commonwealth to a true understanding of what industrial education is and how much of a benefit it can be to the people if properly started and cultivated. The one duty, of course, which is of more importance than that is the duty of devotion to your Alma Mater, the Institute of Technology.

In coming here to-night I came to enjoy myself, and I never can do that when I am attempting to make a speech. I expect to enjoy myself for the rest of the evening in hearing the men who are to speak to you. But it has been really a great pleasure to me to bring here tonight the greetings of the Commonwealth to your new President. May he be a great success in his great position! We will all loyally support him, and do all in our power to see that his régime is successful and that the Institute of Technology goes forward to greater accomplishment in the future than in the past. I thank you very much.

In introducing Dr. Noyes, Mr. Snow said:—

"Though not bearing the full title of President, his work has been that of *acting* President in every sense of the word. There has been no break in the work, and there will be none when his successor takes it up. His work has been a work of love and of self-sacrifice, the full measure of which we shall not know until the years have passed by. But enshrined with the names of Rogers, Runkle and of Walker and Crafts and Pritchett shall be that of Dr. Arthur A. Noyes, of the Class of '86."

Professor Noyes spoke upon two general subjects—the development of the Institute during the past year and the relations of the alumni to the Institute.

The first of these subjects was discussed briefly under each of the four heads,—the development of the Institute's equipment, of its educational work, of its student life, and of research in both pure and applied science.

In speaking of the educational future of the Institute, he said, "I believe it is highly desirable to require a five-year period of study for the completion of all our regular courses in science and engineering, as soon as it can be arranged for. Except for students of rather unusual ability, it has, I think, come to be recognized that a period of four years is too short a time in which to give satisfactorily the combination of general, scientific, and professional education which the Institute aims to offer. I believe, therefore, that the five-year course must come as soon as possible, if the Institute is to continue to meet successfully the competition of other institutions which are more and more requiring their engineering students to spend five or six years at college and in the professional school. With such an extension of our period of study, there would be offered to the Institute a unique educational opportunity. It would, I hope, never be led to adopt the ineffective university plan, now so prevalent, of two or three years of elective collegiate work of a cultural character as a preliminary to entering upon the strictly professional courses; but it would, as now, offer its students definite courses consistently laid out with the aim of producing at the same time broadly educated men and efficient engineers, architects, or scientific experts, the difference from the present plan being mainly that five years instead of four would be devoted to attaining this result. Just what form should be given to such five-year courses and what degrees should be awarded should, of course, be carefully considered by the Faculty, who should receive the advice of the alumni and others interested in the Institute. It may not, however, be without interest for me to suggest the plan that seems best to me. I would offer to students for the first three years of their study, in place of the present thirteen courses, only the choice between three courses, —one in general engineering, one in general science, and one in architecture,—and would award the Bachelor-of-Science degree for the successful completion of any of these courses. The course in general engineering, for example, would include, in addition to cultural and fundamental subjects, only those engineering subjects in which every engineer should receive instruction, whether he is to follow the profession of civil, mechanical, electrical, or

other branch of engineering. The remaining two years of this period of study would then be devoted mainly to more specialized professional work, for the completion of which the degree of Master of Science in Civil, Mechanical, Electrical Engineering, etc., might be awarded. In a similar way the three-year course in general science might be preliminary to more specialized work in the sciences of chemistry, physics, biology, geology and mining.

The adoption of such a plan, however, involves largely increased space in our laboratories and class-rooms, added equipment, and greater financial resources. It would, moreover, be questionable policy to enter upon it before our tuition fee, at any rate in the lower years, can be substantially reduced, owing to the financial burden that would be imposed on our students."

Professor Noyes spoke of the relations of the alumni to the Institute in part as follows:—

"This Alumni Association, as the first article of its constitution says, exists for the purpose of promoting the interests of the Massachusetts Institute of Technology. It is not primarily an organization for increasing sociability or good fellowship, though it should fulfil that function also; but it is essentially an organization for advancing the welfare of the Institute. I want first to tell you how great has been the assistance afforded by the alumni during the past three years on the financial side by the contributions they have made toward our current expenses. An average sum of $41,600 has been contributed each year during the past three years; and this has enabled the Institute to do many things in the line of improvement and development which would have been entirely impossible without it. During the past year the alumni contribution has been used in not far from three equal parts for three lines of development: first, for the development of the plant and equipment of the Institute; second, for the improvement of the conditions of student life, under which are included the provision for half the cost of the new Technology Union, the contribution for the support and maintenance of the athletic field, and provision for the personal conferences in mathematics and in English between the first-year students and their instructors; and, third, for increasing

the salary list of the Institute, thus enabling us to secure and retain the most successful teachers, and to increase the number of instructors, so as to provide for more individual work.

"I want, however, to speak tonight especially of the assistance which the alumni can render in other directions than the financial one. In order that they may aid us effectively, it seems to me the first condition is that the alumni know the Institute thoroughly,—that they keep in touch with it and with its progress. Many alumni picture to themselves the Institute as it was when they were there, ten or twenty years ago. It is constantly developing, and many of the unsatisfactory conditions which then existed have passed away. This, for example, is true in a high degree of our student life and of the opportunities for outside student activities. Alumni should keep in touch with the Institute through THE TECHNOLOGY REVIEW, which is now a publication of this Association; and they should visit the Institute whenever they can. I am sure that such closer knowledge will lead them to an optimistic view of the future of the Institute and to satisfaction with the work which it is now doing. Such knowledge, too, will enable them to make our needs known to others who might be able to assist us, to bring to the attention of manufacturers the opportunity for a solution of their problems which the Institute offers, and to induce capable students to come to us. We are not interested in increasing the number of our students, but we are always desirous of securing young men of the highest type,—those not only of high scholarship, but of the best manhood. And the alumni have abundant opportunities as they go about the country to present to such young men the advantages which the Institute offers.

"Another way in which the alumni can often assist on this side is to secure in their own towns the establishment of scholarships in connection with the local high schools. If, for example, there were one or more free Institute scholarships at the various important high schools in New England, we should get very soon a class of picked men of high quality. Moreover, the existence of such scholarships is of great advantage in bringing to the attention of all the pupils of such preparatory schools the opportunities afforded by

an education in applied science. It is a form of benefaction, too, that appeals to many men who like to do something for the youth of their own town.

"These are simply suggestions as to a few ways in which the alumni can assist the Institute. The coming years are to be years of great development, and in that period the function of the alumni is to be far more important than it has ever been before. In closing, therefore, I would give to you, as the watchwords of our coming development, Confidence and Co-operation,—confidence in the soundness of our educational system, in its great future and in its support by the community; and active, energetic co-operation in promoting its welfare among all those who are in any way related to or connected with the Institute.

"One of the great problems that was before us—that of securing an able, devoted leader, a worthy successor to Rogers and Walker —has been most happily solved. And we are now prepared to take up the next great problem, which is that of replacing the old temporary plant of the Institute, in its crowded surroundings, by a modern and permanent one, situated in a location which will better admit of the highest development of the Institute. As a supplementary expression of our immediate aims, I would therefore give you—'the Institute, with its old standards and ideals, new-built on a new state.'"

Mr. Snow introduced the President-elect as one who claims no clime nor country, but in the broadest and best sense as a man of the world, trained as a teacher and administrator, a close student of man as well as of matter, and builder of the new Technology that is to be. Dr. Maclaurin spoke as follows:—

Mr. President, your Excellency, Ladies and Gentlemen,—May I say at the very outset that the fact that in addressing its members I can use that term "ladies" is to my mind one of the most hopeful and significant features of the Institute. Now, ladies and gentlemen, you have all, at some time or other, experienced the pleasure of a hearty send-off, with your friends around you, smiling faces, waving handkerchiefs, and all the signs of good will. You feel assured that the ship on which you stand is the very best that is afloat, and that the dangers and difficulties of travel have been immensely exaggerated by the stay-at-homes. And you also feel that the

long, relentless roll of the ocean that you will probably encounter later is a thing that at such a time ought not to be considered at all. Now, I expect that it is with the view of putting me in some such frame of mind that you have invited me to be your guest to-night, and through your speakers have said so many things that cannot fail to please. I need not say that I feel grateful for this expression of your kindly feeling, and hope that the relations between the President and the alumni will always be maintained at this high level of cordiality. In that respect the Institute began wonderfully well, for I read that at the very first annual meeting of the alumni it was resolved "that we tender to President Rogers the expression of our love and gratitude." I believe that that feeling toward the President has been maintained right down to the present time. At any rate, if I may speak for myself, I have received from the members of the Association letters and telegrams assuring me of the utmost cordiality and good will. And I cannot fail to be touched by such expressions and to be braced for strenuous action by the assurance of your cordial sympathy.

Now, on such an occasion and with so much encouragement, one can scarcely fail to be hopeful even if not unduly optimistic. It seems to me that, whatever mistakes I may make, the Institute must be carried along on the rising tide of science. We have all noticed that the tide of human achievement rises and falls somewhat irregularly. Now it seems to come in very slowly, so that you can hardly be sure that there is any motion at all. Again it advances with a rush, and carries everything before it. At the ebb one is apt to be pessimistic. And so, not so very long ago, a distinguished professor of this country deemed it necessary to combat in a spirited address the idea then prevailing that the day of science had ended, and that there was nothing more of the first importance for science to discover. That, I may say, was before the day of Faraday and of the wonders in physics and chemistry and biology that have followed since. Now, this Institute was founded when the tide of achievement was very high. Think of those wonderful years around 1860! It would be difficult to fix your attention on a more interesting period in the world of activity. In active political life, you know that the clouds were gathering that broke into the awful storm of the Civil War, one of the most terrible as also one of the most glorious in human history. There are men here to-night who will naturally think of that war on its awful side. They know, having seen it, what it really meant in blood and treasure. But those of us who are of a younger generation are much more likely to think of its glorious side,—the splendid victory that it won for human freedom and the federal idea.

Now, those are two ideas—federation and freedom—that have dominated the political world ever since. You know, of course, that the federal idea was not a new one, but you know also that men gravely doubted whether it could stand the test of modern conditions. And you know how important was the decision not only for this country, but for most of the world,—how it affected Switzerland, how it affected Germany, how it affected large and important parts of the British empire, such as Canada, Australia and South Africa. But, great as was the importance of the idea of federation, there was another idea that took its rise at the same time, which most of us will probably agree was even more important. And that was the idea of development, of evolution, if you prefer that term. You remember that it was in 1859 that Darwin's "Origin of Species" appeared. It was in the same year that the principles of spectrum analysis were clearly explained, and it was just about the same time that Maine's "Ancient Law" was published. All these gave an immense impetus to the idea of development. You all know more or less of what Darwin did for biology. You all know probably something of what spectrum analysis has done for the idea of development in a larger sphere. It has enabled us to trace, not the rise and fall of a mere species, not the decline of a Roman empire, but the growth and gradual decay of solar systems and the like. And as for Maine's "Ancient Law," it set men's minds working along the lines of the historical development of human institutions,—a field that has proved so fascinating and so fruitful in the intervening years.

Now, a time that could give rise to such far-reaching ideas was no ordinary time. And it was just at this time that the idea of the Institute germinated in the fertile brain of Professor Rogers. He, trained as a pure scientist, saw clearly the coming of the day of applied science. And he saw also clearly that it was the duty of this community to prepare itself for the important changes that would be wrought by the coming of that age. And I think that there could have been no greater effort of statesmanship and patriotism than that of William Barton Rogers, and little or nothing that could have been nobler, if you have a proper prospective of the vast human interests involved.

Since that day the tide of science has ebbed and flowed a good deal. Science has suffered not a little from foolish advocacy. It early had to fight its way into schools and colleges, and got into a foolish conflict with humanism, as if there could be any real conflict between science and humanism. And then, again, some men of science, mostly of the rank and file, but with a few of the leaders, made exaggerated claims as to the domain of science,

and they proposed by its means to solve problems that had hitherto defied solution. In due time they, too, "came out at the same door wherein they went." And this led to not a little disappointment and not a little foolish talk about the bankruptcy of science. One good result of that has been that men of science now see more clearly what are their real limitations. Fixing their attention on their proper work, they are now once more upon the rising tide. For all of you who are in touch with research know that this is one of the great epochs in the history of science. Many problems that have long been stumbling-blocks in the path of science are being solved; and in chemistry, physics and biology advances are being made that we all regard as epoch-making.

Now, what has all this to do with Technology? Much every way. For, as Dr. Noyes has reminded you, and you probably well know, there is the closest possible relation between pure science and applied science. And with an alert people you can reasonably expect a great day for applied science to follow rapidly on a golden age of research. I think that the presence here tonight of Dr. Woodward is a significant fact. He, as you know, presides over an institution that is destined to play a great part in the history of the world,—an institution devoted wholly to the prosecution and encouragement of research. I think that our admiration for Dr. Woodward, and those of us who know him personally will admit no limits to that admiration,—I think that admiration typifies the attitude of Technology to research.

My point is that, as we are now again on the rising tide of science, we have reason to be hopeful in Technology. Whether the tide will rise as high as that in the period of 1860 and thereabouts, it is difficult to say. But, even if it does not, there are features of the situation which should make us hopeful. See how different are the conditions under which we must work from those the dauntless founders of this Institute had to face. In those days science had scarcely begun to come into its own. Even its contributions to material advancement were grudgingly admitted and what it had done for morals and for the intellect was scarcely appreciated at all. Even today I doubt very much if these things are properly recognized. However, all men, all thinking men at least, are beginning to see that there has come about within the last fifty years an enormous change along the line of freedom of thought. And all men recognize that that change is mainly due to science. It is also mainly to science that is due the general recognition of the principles that should guide our personal and national life, founded on ideas of law and of order. But perhaps more important than all is

the general spread of a thorough open-mindedness. This is something which touches us on the moral, on the intellectual, and on the practical side of life. And nowhere is it more important than in the field of Technology.

Some of you have read an article under the very attractive title, "How to win Fortune," written some twenty years ago by Mr. Carnegie. He discusses, among other things, the college education of the day. And, after making a list of the leading men of business in this country, he says, "The almost total absence of the college-bred man from this list is to be deeply pondered." He tries to explain the absence. And then he goes on to say that a different state of things is to be expected and is actually found with those who have been trained in the newer schools of technology. He says that those young men have a great advantage in that they are free from prejudice and thoroughly open-minded. I hope that that is true, for it seems to me that, if it is true, it is quite sufficiently important in itself to make us spend all our lives in the service of Technology.

Now, while the refining and elevating effects of science were little recognized, and even its very utility in practice was doubted, it is not surprising that it was neglected in the schools. It was met by opposition from unexpected quarters. Men strove to show, and they succeeded in getting people to believe, that there was something inhuman about science, or the teaching of it, and that, lacking humanity, it did not afford a good training ground for men of affairs. I believe that view is current even today, and that people don't sufficiently recognize what utter nonsense it really is. I hope, however, I need not say to you that this institution, or any similar one, could not better be described than as a great public service corporation,—an institution specially designed to train men to serve their fellows and to serve them well by a thorough knowlege of the needs of the modern man. And I need not tell you that not only is this institution well designed for such a purpose, but that it actually turns out men able and ready to play their part in public life. The fact that we have with us tonight an alumnus who is the leading man of affairs in this state is sufficient evidence of that.

I have said so much about the changing attitude toward science in general that I have left myself little time to say anything about the changing attitude toward applied science. But that is something so well recognized that I need scarcely mention it. Think of the fact that, when Rogers founded this Institute, he had to write to a parent that there was not a single school in the whole of this country where a man could be trained in mining or metallurgy. We have changed all that. And now it is generally recognized that you can test the intelligence of a nation by its attitude to applied

science. And so I think we have reason to be hopeful on general grounds as to the prospects of such an Institute as this.

Now, I notice that at the very first meeting of the Alumni Association it was agreed that you should meet annually and that at such meetings you should freely discuss the condition and the policy of the Institute and freely criticise it. I have no doubt that there has been some such discussion and criticism tonight. And I want to urge upon you your duty of communicating that candid discussion and criticism to those of us who are primarily responsible for the government of the Institute. If you are young graduates, you are probably conscious of your shortcomings as you are turned from the mint, and you may have suggestions that will be helpful in putting your successors in a better position. If, on the other hand, you are older graduates, then you will at least have had means of testing the fitness or lack of fitness of the younger men who come into your employ. And, of course, your knowledge of the actual conditions of life should make anything you have to say, any suggestions you have to make, of the greatest value.

The other thing that was to be discussed, according to your original resolution, was the policy of the Institute. At this late hour I need say little about that. You are probably aware that I don't come here to change your policy. I come, rather, to carry out, with the best of my ability, a policy that has been well established and of which I thoroughly approve. You are also probably aware that, as far as our problems are concerned, in my judgment the most pressing problem we have to face is the provision of a proper site and buildings for this Institute. It seems to me a sort of irony of fate that on the very first occasion I meet with you I should have to talk about buildings and sites, for I have so often criticised the educational authorities for acting as if buildings made the institution. I hope you will not misunderstand me in this, for the Institute of Technology does not require to be made. It is made. Great as is your loyalty and enthusiasm for the Institute, I doubt if you fully realize its truly international reputation. That reputation is due largely to the broad lines on which it was laid out by Rogers and to the splendid work done by Rogers' successors, in particular General Walker. The fact that it needs a change of site now is due not to its failure, but to its success, to its present greatness. And it seems to me that, this fact being recognized, the sooner we make the change, the better.

Of course, this change will lay a heavy burden of work and responsibility upon us all. And I need not say that there can be little hope of success unless

we have your active and whole-hearted sympathy and support. You can help in countless ways, as Dr. Noyes has suggested, not only directly, but indirectly by your influence upon others. I suppose that the first thing to do will be to organize your efforts. But this country has such a genius for organization that I need not do more than suggest such an obvious fact. Then, possibly, our greatest hope, for financial support at least, lies in the state of Massachusetts. But that state and its capital are famous throughout the world for the knowledge-seeking spirit of their citizens, and the interests of those citizens are so intimately bound up with the applications of science that it seems to me they can hardly fail to recognize the claims of Technology. I think also it is extremely improbable that the citizens of this state will allow to languish an institution that has done them so great a credit in the eyes of the outside world. But this institution is not merely a local affair, so that we can look beyond this state for aid. I understand that it draws almost half of its students from other parts of the Union. And, that being so, we can well expect support from a distance as well as from our immediate neighborhood.

The citizens of this country have a reputation for liberality. They have also a reputation for being thoroughly practical, practical to the core, and it would be a strange paradox if they should prove illiberal to so practical an institution and one so thoroughly deserving of support.

Dr. Robert S. Woodward, president of the Carnegie Institution, who was predecessor of Dr. Maclaurin in the chair of mathematical physics at Columbia, was the next speaker. Professor Woodward spoke of the beginnings of the schools of technology in America in what appeared to him to be a heroic age. "It was the epoch of the emergence of the scientific school and of the new order of training," he said. "As Professor Maclaurin has indicated to you, the schools of science came to the front with difficulty. They arose, not by reason of the other and the older forms of education, but in spite of them. They have therefore, in addition to their initial and main purpose for existence, accomplished a great work. They have shown us, in addition to their main purpose, that there can be no such thing as a trust on culture. The older schools of learning, known as the humanistic schools, look down upon the rising tide of science to which Professor Maclaurin has referred, the tide which has brought on our modern schools of technology and science.

They were crowded with the young man who studied Latin and Greek in order that he might earn a living by teaching others that they possessed higher moral qualities than the man who studied engineering in order that he might learn how to build bridges that would not fall down and kill folks." Professor Woodward spoke of the development of the graduate schools and research work and the difficulties that beset a modern institution that is pioneering along these lines.

Mr. Edwin S. Webster ('88), the newly elected president of the Alumni Association, who was next introduced, called special attention to the importance and dignity of the new Alumni Council, which, he said, would be able to aid the Institute in a very material way. Mr. Webster emphasized the importance of the Reunion, and asked for the co-operation of every man in order that it may accomplish its full measure of success.

New Term Members of the Corporation

At the stated meeting of the Corporation held March 10 the Corporation selected three men as term members from the five names presented. The three successful candidates are Walter B. Snow ('82), of Boston, Theodore W. Robinson ('84), of Chicago, Charles R. Richards ('85), of New York. These men will serve for a period of five years. The three term members of the Corporation who were selected to serve for the first period were retired on the election of the new members. The retiring members are F. H. Newell ('85) and E. S. Stevens ('68), Richard H. Soule, who was one of the three term members whose term expired in 1909, having recently died.

Class news this issue is unusually full. The classes not represented are '70, '71, '72, '73, '74, '76, '77, '80, '83, '90, '91, '03. We hope that in the near future every class will be represented.

THE NEW ALUMNI COUNCIL

Members of the new Alumni Council have now been named, except the representatives of some of the local alumni associations. The first meeting of the council will probably be held about the middle of June, when it is expected that the alumni will be asked to co-operate with the Corporation and Faculty in definite ways. The council is so organized that it is free to accomplish things without restraint, and the whole Association looks to it for results.

The council is made up as follows:—

Five latest living ex-presidents:—

W. B. Snow. Frank L. Locke.
Everett Morss. Samuel J. Mixter.
Frederick H. Newell.

Local societies of the M. I. T. and representatives:—

Technology Club of the Merrimack Valley, George Bowers ('75).
Washington Society of the M. I. T., I. W. Litchfield ('85).
Technology Club of Philadelphia, Percy E. Tillson ('06).
Technology Club of New York, Francis G. Green ('95).
Pittsburg Technology Association, Warren I. Bickford ('01).
North-western Association of M. I. T., I. W. Litchfield ('85).
Rocky Mountain Technology Club, representative not appointed.
Technology Club of the Connecticut Valley, representative not appointed.
Technology Club of Buffalo, representative not appointed.
The Cincinnati M. I. T. Club, representative not appointed.
Annapolis Society of the M. I. T., representative not appointed.
Technology Club of Rhode Island, representative not appointed.
Technology Club of New Bedford, representative not appointed.
Technology Club of Hartford, Conn., representative not appointed.

Vermont Technology Association, representative not appointed.
Technology Club of Minnesota, representative not appointed.
Technology Club of Northern Ohio, representative not appointed.
The Technology Club of the South, representative not appointed.
Technology Club of Central Pennsylvania, representative not appointed.
Technology Club of Northern California, representative not appointed.
Technology Club of Southern California, representative not appointed.
M. I. T. Club of Central New York, representative not appointed.
Inland Empire Association of the M. I. T., representative not appointed.
Technology Association of Oregon, representative not appointed.
Technology Club of Puget Sound, representative not appointed.
Detroit Association of the M. I. T., representative not appointed.

Representatives at large:—

To serve for one year.	*To serve for two years.*
Edward Cunningham ('91).	C. R. Cross, ('70).
Joseph H. Knight ('96).	A. D. Little ('85).
H. Souther ('87).	Charles T. Main ('76).
J. Swan ('91).	G. F. Swain ('77).
A. Winslow ('81).	J. P. Tolman ('68).

Class representatives:—

'68, Robert H. Richards.	'75, Thomas Hibbard.
'69, Howard A. Carson.	'76, John R. Freeman.
'70, E. K. Turner.	'77, R. A. Hale.
'71, E. W. Rollins.	'78, C. M. Baker.
'72, Maurice B. Patch.	'79, E. C. Miller.
'73, F. H. Williams.	'80, George H. Barton.
'74, George H. Barrus.	'81, John Duff.

'82, James P. Munroe.
'83, Harvey S. Chase.
'84, Harry W. Tyler.
'85, I. W. Litchfield.
'86, Arthur G. Robbins.
'87, E. G. Thomas.
'88, A. T. Bradlee.
'89, Walter H. Kilham.
'90, William Z. Ripley.
'91, Charles Garrison.
'92, Leonard Metcalf.
'93, Frederic H. Fay.
'94, S. C. Prescott.
'95, Andrew D. Fuller.
'96, J. A. Rockwell.
'97, C. W. Bradlee.
'98, C.-E. A. Winslow.
'99, H. J. Skinner.
'00, H. E. Osgood.
'01, Robert L. Williams.
'02, C. A. Sawyer, Jr.
'03, F. A. Olmsted.
'04, M. L. Emerson.
'05, G. DeW. Marcy.
'06, George F. Hobson.
'07, Lawrence Allen.
'08, H. A. Rapelye.

Two More Trophy Cups

Benjamin Hurd ('96), has offered a cup for competition at the annual Technology spring class meet in the 120-yard high hurdles event on a similar basis as the offers of cups in the mile run and the 440-yard dash recently made by J. L. Batchelder, Jr. ('90), and Dr. J. Arnold Rockwell ('96), respectively. A separate cup will be given each spring, and the cup becomes the permanent property of the winner of the event.

"Ben" Hurd established a Technology record of 16 3-5 in the high hurdles in 1894. This record stood until Ovington made 16 2-5 in the Dartmouth meet at Hanover in 1903. Hurd also held for a time the record of 26 1-5s in the low hurdles, making it in 1895.

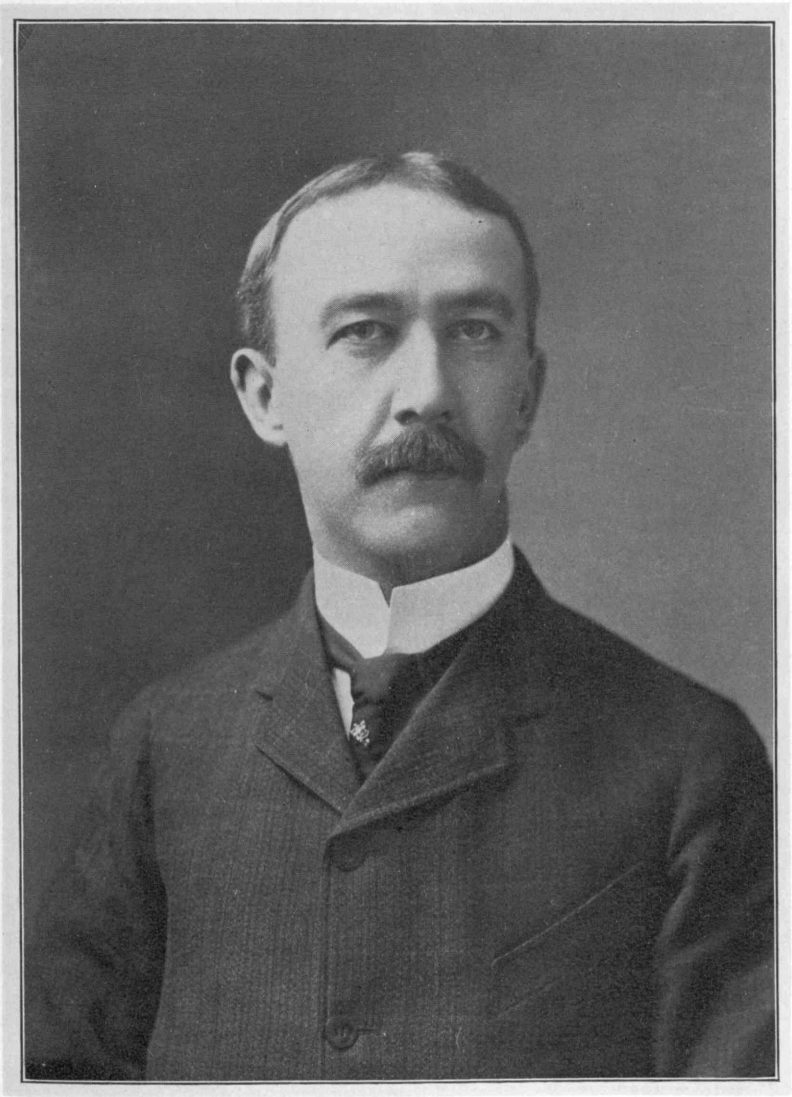
Major Frank H. Briggs ('81), has just donated a cup to be given to the best all-round athlete at the Institute. This is to be renewed by the donor each year, so that the cup becomes the permanent possession of the winner.

PROFESSOR SPOFFORD SELECTED

He will succeed Professor Swain as Hayward Professor of Civil Engineering

The Executive Committee of the Corporation at its stated meeting on Friday, February 26, voted to appoint Professor Charles M. Spofford ('93) to the Hayward Professorship of Civil Engineering, which will become vacant at the beginning of the next school year through the resignation of Professor George F. Swain. The Department of Civil and Sanitary Engineering will be organized for the ensuing year upon the following basis: Professors Allen, Porter, Spofford and Robbins will be asked to take charge of the instruction in railroad engineering, hydraulic engineering, structural engineering and topographical engineering, respectively. Professor Allen will be asked to act as administrative officer of the department in its general relations, Professor Spofford to act as representative of the course in Civil Engineering in its relations with the Faculty and with students, and Professor Porter to act as representative of the course in Sanitary Engineering in similar relations.

Mr. Spofford was graduated from the Putnam School in Newburyport in 1889, and entered the Institute, receiving the degree of Bachelor of Science in Civil Engineering in 1893. During the following summer and fall he was engaged in field and office work upon the survey of the Massachusetts and Vermont boundary line. At the opening of the second term of the school year 1893–94 he returned to the Institute to take up a post-graduate course in civil engineering under Professor Swain. After completing his post-graduate studies in 1894, Mr. Spofford entered the employ of the Phœnix Bridge Company of Phœnixville, Pa., remaining there until October, 1896, when he resigned to become assistant in civil engineering at the Institute, but returned for the summers of 1897 to 1900, inclusive. He thus received nearly three years of training in the engineering corps of one of the leading bridge companies of



PROF. CHARLES M. SPOFFORD, '93.

this country. During the nine years that Mr. Spofford was connected with the teaching staff of the Institute, he spent several summer vacations and some time during the school year in the employ of the Engineering Department of the City of Boston as assistant engineer upon the design of a number of bridges, including the Broadway, Atlantic Avenue and Northern Avenue bridges, and upon miscellaneous structural work. At that time the bridge work of the city was under the charge of the late John E. Cheney, who was one of the ablest structural engineers in this country, and who achieved a wide reputation through the excellence of his designs. During that period Mr. Spofford was associated with Mr. Cheney in consulting work upon bridges and buildings. He has examined and reported upon the condition of a number of bridges and other structures, and, as consulting engineer for the Boston Elevated Company, examined, reported upon and designed the re-enforcement required to place a number of Boston bridges in condition for heavy street car traffic. The work included a very original and ingenious design for strengthening the Boylston Street bridge over the Boston & Albany Railroad. Since going to Brooklyn, Professor Spofford has been employed by the city of New York as an expert upon a question relating to the strength of mortar. He has also done experimental work for one of the prominent contractors of New York and for one of the larger asphalt companies of the city. His principal consulting work in New York has been that done during the summer of 1908, when with Mr. C. W. Hudson he investigated the strength of the Blackwell's Island bridge, a statistically indeterminate work, requiring the application of the highest principles of structural design for its solution. This is the second largest and heaviest bridge in the world, and the experience gained in this investigation is one which few engineers are fortunate enough to obtain. Professor Spofford has an office in New York, where he is associated with Mr. Hudson, in a firm of consulting engineers. Professor Spofford was a member of the instructing staff of the Institute from 1896 to 1903. At the Institute he taught bridge design and structures, and he gave the course in foundations during the latter portion of his stay. He was engaged also in surveying

field work and in the railroad survey. In 1905 he was appointed professor of civil engineering at the Brooklyn Polytechnic Institute. At this time this institution was entering upon a new career under a new president, and he was engaged to reorganize the civil engineering department. This he has done so thoroughly that the standard now existing there is probably excelled by few, if any, institutions in the country. Since going to Brooklyn, he has taught hydraulics and mechanics of materials throughout the four years, and for two years has taught the subjects of public water supply and sewage disposal. From the beginning he has taught a course in foundations, and has taken personal charge of all work in structures and bridge design, the two latter subjects being the strongest feature of the civil engineering course. A notable feature of his work in Brooklyn has been his evening lectures upon structures and his Saturday afternoon exercises in bridge design. These lectures are taken by adults of from twenty to forty years of age who are engaged in active engineering work in and about New York, most of these men being graduates of college and other technical schools, including graduates of the Institute. In connection with his teaching at Brooklyn, Professor Spofford is preparing a very complete work on Structures, which will contain much original matter and be of great practical use, the aim being to prepare a thorough treatment of the fundamental principles and to illustrate these principles by numerous examples; higher types of structures being also treated in a clear and practical way. Professor Spofford is a member of the American Society of Civil Engineers, of the Boston Society of Civil Engineers and of the Brooklyn Engineers' Club. Of the latter he is a director, and for the last year has been chairman of its committee on entertainments. He has been a member of the committee on re-enforced concrete of the National Association of Cement Users, and is a member of the Society for the Promotion of Engineering Education. He is also a member of the Hamilton Club of Brooklyn, the leading social club of that city.

PROFESSOR SWAIN TO LEAVE

Strength of Civil Engineering Department Largely Due to His Administration

Professor George Fillmore Swain, who has been for many years head of the Department of Civil Engineering at the Institute, has been appointed Professor of Civil Engineering in the Harvard Graduate School of Applied Science, and will enter upon his duties there next fall. Professor Swain was born in San Francisco, March 2, 1857. He graduated from the Massachusetts Institute of Technology with the class of '77. Immediately following his graduation he spent three years at the Royal Engineering School at Berlin, devoting his attention largely to the study of structures, hydraulics and railroads. On his return to this country in 1880 what may be called his first professional work was in the capacity of special agent on the Tenth Census, in investigating the water power employed in manufactories on the Atlantic slope, this work not being completed until 1882. He came to the Institute as Instructor with General Francis A. Walker, Director of the Census, when the latter became President of the Institute in 1881. In 1883 he became Assistant Professor, and in 1887, shortly after the retirement of Professor G. L. Vose, he was promoted to the charge of the Department of Civil Engineering with rank of Professor, and has held that position until now. He was young to be advanced to a post of this importance, but it was early demonstrated that the choice was justified. About this time occurred the failure of the Bussey Bridge, near Forest Hills. Although substantially without practical experience in structural work at that time, Professor Swain's analysis of the causes of the disaster and his evident grasp of the subject produced so favorable an impression that he was selected as the best man available for the position of engineering expert for the Railroad Commission,—an office newly created as a result of the accident. This, apparently, was to him the opportunity which

comes sooner or later to most competent men. He accepted it, and made good. It is not improbable that the ability he showed in the case of this investigation was an element which influenced his appointment to the charge of the Department of Civil Engineering. His success, both as engineer and as teacher, has far more than justified his selection in both capacities.

As engineer of the Railroad Commission, he has necessarily assumed responsibility for the safety of all the railroad and street railway bridges of the state; and it is worthy of note that he devoted his efforts to securing results rather than to acquiring distinction by alarming the public, as he might have done at the outset.

In 1894 he was appointed by the mayor of Boston one of the three members originally composing the Transit Commission, of which he is now the senior member. The success of the commission has been unusual. The work first intrusted to it was completed promptly and well within the original estimates. It is probable that no similar work has been accomplished elsewhere with so little disturbance of the streets and interference of traffic as has been the case in this work, even in the narrow streets of Boston. The East Boston tunnel, a late part of its work, is also a very fine example of engineering construction. Success in such work depends largely on the selection of the right men to carry it on, and there is little doubt that Professor Swain, the engineer member of the commission, was largely responsible for the securing as chief engineer of the Transit Commission H. A. Carson, M. I. T. '69, who has unusual fertility of resource in difficult sub-surface work.

As an engineer, Professor Swain has been appointed a member of several commissions for the abolition of grade crossings, and has also been consulting or designing engineer for highway bridges and for several important public buildings, besides serving as expert in court cases. He is a member of two foreign engineering societies, the Institution of Civil Engineers of London and the Society of Engineers and Architects of Hanover, Germany. He is a member of a number of engineering and technical societies in this country, the most important being the American Society of Civil Engineers, of which he is now a vice-president. He also served

this society for a time as chairman of its committee on uniform tests of cement,—a committee which has done very important work in standardizing cement testing in this country. He has been an active member of a similar committee of the Society for Testing Materials.

He was elected president of the Boston Society of Civil Engineers in 1896, and in his presidential address he urged upon engineers the necessity of devoting more attention to securing breadth and culture, both by reading and by closer contact with non-engineering people in clubs and otherwise. He is himself a member of the Commercial Club, a business body, and of the St. Botolph Club, a social club with literary and artistic tendencies. He has recently been appointed a member of the National Conservation Commission, for which his training in hydraulics and his experience on the census especially fit him.

He has made a number of engineering publications. His notes on hydraulics and his notes on structures have been restricted in circulation to his classes. The *Journal* of the Franklin Institute published two contributions by him in 1883,—"Mohr's Graphical Theory of Earth Pressures" and "The Application of Virtual Velocities to the Determination of the Deflection and Stresses of Frames." His paper before the American Society of Civil Engineers in 1887 on "The Calculation of Stresses in Bridges for Actual Concentrated Loads" called special attention to the use of "influence lines." All three of these are important papers, which have been very well received and have had a definite effect upon advanced practice in this country.

As an educator, he has been prominent. He was elected president of the Society for the Promotion of Engineering Education in 1894. His presidential address upon "The Profession of Engineering Teaching" emphasized the importance of the teaching side, and pointed out that, however able as an engineer the professor of engineering may be, he must be first of all a teacher. He has himself always been interested in the teaching side of his work. His effort has been notably to force his students to think. He has been the drill-master in a subject peculiarly adapted to drill; and exact-

ing, as one must be to secure results. He was trained to habits of thorough work in study by Professor J. B. Henck, who was one of the teachers in the early history of the Institute who had very great influence in fixing the high standards then and now characteristic of its work.

Professor Swain's views of the importance of good teaching have become the views of his department. All of the professors and instructors are interested in teaching as well as in engineering. This has come about in part as the result of his own training of many of them; in part through securing men whose views were consistent with his; in part, by a general welding together of opinions. Under his charge the staff of the department has grown from one professor, one assistant professor, two instructors, and one assistant, to a force of four professors, two associate professors, two instructors and eight assistants. It is an interesting fact that, in selecting new men for teaching in the department, he has invariably selected men who have had the Institute training, except in the case of one or two young assistants, who however were not advanced. There has grown up in this way and now exists a harmonious department, having the same teaching ideas as his own. It goes without saying that the department has become so strong that it will be capable of standing alone when Professor Swain leaves it. It would indeed be a poor tribute to the efficiency of his administration to suggest otherwise.

Among the qualities which have specially contributed to his success as an engineer and a teacher may be mentioned his quickness in thought and action, his power of clear thinking, his skill as a mathematician. Moreover, he has an almost phenomenal capacity for work. He has never spared himself, and the work he has carried would have proved a burden too heavy for many to bear. What wonder, then, that after twenty-nine years of strenuous work he finds it wise to accept a position which will be free from administrative care, and in which the smaller classes will make the demands for instruction less pressing.

Professor Swain takes with him to his new position the best wishes of his Faculty associates and of the large number of his former students who have profited from his teaching.

RESIGNATION OF PROFESSOR CLIFFORD

An Appreciation of his Work in the Electrical Engineering Department

On January 21, announcement was made that Professor Harry E. Clifford, of the Department of Electrical Engineering, had accepted the position of Professor of Electrical Engineering at the Harvard Graduate School of Applied Science.

It is a striking commentary on the rapid development of the Institute that, on the retirement from its Faculty of a man who is still young, one can say that during his connection with the Massachusetts Institute of Technology it has grown from an institution with an enrolment of six hundred and thirty-seven students and a Faculty of twenty-five members to a great scientific school with one thousand four hundred and sixty-two students who are guided by a faculty of ninety-two professors; that during the same time, four new courses of instruction have been added; that a great awakening to the needs of our students along other than scientific lines has taken place; and that the responsibilities of the Institute to the public have not only become appreciated, but have been made the subject of earnest study by those who love her best. To the later development of the Institute no one has more heartily and unselfishly devoted himself than Professor Clifford, and it is only just that his services should be appreciated and recognized.

Professor Clifford was graduated from the Institute in 1886, at the age of twenty, after taking the then newly established course in Electrical Engineering. He entered at once upon what proved to be his life-work, that of the teacher. Subjects of a mathematical nature possessed a peculiar attraction for him; and during the years which may be called his years of preparation, he had charge of practically all our instruction in Mathematical Physics, giving courses in Mechanics, Acoustics, Astronomy, Precision of Measurements, Theory of Potential, Theoretical Optics, Wave Theory,

Calculus, Photometry, Theoretical Electricity, and Heat,—the latter to the entire third-year class. During this period he also studied at Harvard University Advanced Mathematics, Mathematical Physics, Music and Fine Arts, and served as assistant at the Harvard College observatory. To the formal studies must be added the advantages derived from observation during extensive travel both in this country and in Europe. Thus was laid that store of scientific and general knowledge that has so vitalized the teaching of later years, and imparted a remarkable perspective to all his courses.

Professor Clifford's specialized teaching may be said to have begun in 1891, at which time he first gave courses in Periodic Currents. From that time to the present there has been steady progress, more than keeping pace with the increasing industrial applications of alternating currents, his courses in Alternating Current Machinery becoming the very keystone of the instruction in electrical engineering. Not the least remarkable feature of these courses has been the demonstration of an extraordinary ability to deal with large classes in abstruse subjects.

In 1901 the course in electrical engineering was made a separate department of the Institute; and circumstances rendered it necessary for Professor Clifford to assume the executive work of the new department from its very beginning. In 1904 he was made acting head of the department and Professor of Theoretical and Applied Electricity.

It was in directing the Electrical Engineering Department and in his participation in outside but related activities, that Professor Clifford made his greatest contribution to the Institute. To this work he brought abounding enthusiasm, high ideals of the function of the teacher, definite ideas as to the manner in which that function should be exercised and a personality which united both instructing staff and students in an unusual degree.

During Professor Clifford's administration the departmental policy was determined by conferences, and in these conferences no one hesitated to express his mind when it appeared to him that the welfare of the department or of the Institute was at stake.

The result, was, as might have been expected, a staff closely knit together by sympathy and common ideals and filled with enthusiasm and large plans for the future, the members of which carried to their class-rooms that confidence in the department and the Institute without which no teaching, however laboriously performed, can accomplish its full purpose.

The order of development decided on was: first, to adjust the internal arrangements of the department and to bring them to the highest possible efficiency; second, to adjust the relations with other departments of the Institute in like manner; third, to develop graduate work and investigation; fourth, to take up the larger relations of electrical engineering education to the industrial public. The internal development of the department presented many problems of interest and of great educational importance. That first attacked was the matter of laboratory instruction. Of all instruments of education, an engineering laboratory is perhaps the one most likely to yield permanent results of a value so small that they are entirely incommensurate with the expense of maintenance and expenditure of students' time. In these days of large classes this is much truer than formerly, for the tendency toward routine both on the part of students and the instructing staff is, in these days of crowded curriculums, only overcome by the greatest effort; and it frequently happens that an engineering laboratory course which should be one of the most effective methods of instruction becomes one of the least. Again, there is frequently a lack of correlation between the laboratory and lecture work, which results in a great loss of educational efficiency. A clear perception of these dangers led to the establishment of the present laboratory scheme of the Department of Electrical Engineering. Briefly stated, it is this: Before going into the laboratory, each student is required to write a preliminary report on the subject-matter of his experimental work. These reports are written in the class-room, and are carefully criticised before the student is allowed to go into the laboratory. Each student must personally consult the professor in charge with respect to any errors in his preliminary report before performing the experiment. This brings every student into close personal

contact with the teaching staff. The experiments assigned are of an educational nature, illustrating the points of fundamental importance previously taken up in the lecture-room. Thus close correlation of lecture and laboratory work becomes one of the chief characteristics of this method of instruction. This matter is insisted upon as of fundamental importance. This really great advance in laboratory methods would have been impossible of accomplishment but for the self-sacrificing devotion of Professor R. R. Lawrence, who at the beginning took entire charge of the execution of this plan, which has given the Institute the most effective system of electrical engineering laboratory instruction in the country.

Himself an expert as a lecturer, Professor Clifford long ago appreciated the weakness of the purely lecture system of instruction which arises from lack of intimate acquaintance with the individual needs of students. Consequently, class-room instruction was substituted for lectures wherever it was possible. Where this could not be done, recitations supplementary to the lectures were introduced. Professor Clifford assumed his full share of the quiz work; and in this his power to vivify the intellectual life of young men became especially apparent. He was sympathetic when sympathy was needed, and, though he did not hesitate to administer a jolt where it would be effective, yet no man ever came from his class-room with lowered self-respect, but rather with renewed ambition.

As a supplement to lecture work, problems hold a time-honored position, but such work often degenerates into a mere substitution in formulæ, and becomes practically useless. To correct this tendency and put the problem work on a truly educational basis, Mr. C. A. Porter addressed himself, and it is due to his earnest efforts that we now have this work established in so satisfactory a manner. In the beginning there were groans and complaints from the students: they could not get the answers by substituting in a formula, and no two problems were alike; and the course was said to be too hard. However, it gradually dawned on them that they were acquiring a power of analysis to which they had before been strangers, and that facility in the mathematics of engineering could only be attained by practice, and many graduates have not hesitated to

ascribe to this part of their course great weight. The problem work brought the person in charge into such intimate relations with the students that what amounted to a tutorial system was established, and an immense amount of personal instruction adapted to the individual needs of the particular students was given.

In all courses of study where the curriculum is crowded, there is a tendency for the students to focus their attention on the narrow field of the particular studies of the moment, and, to counteract this tendency, classes were formed for the discussion of current engineering literature. Professor Clifford took charge of this work, which, on account of his wide range of knowledge and practical experience, proved to be most stimulating. With the same object in view, systematic excursions to various interesting electrical installations were arranged as a part of the assigned work.

Having a horror of that kind of instruction which merely concerns itself with the cramming of students' minds with a mass of unrelated facts and changing details which are new today and obsolete tomorrow, or that which results in the mere acquirement of manual dexterity, Professor Clifford impressed upon every member of the department that the idea underlying its policy was the development in the student of the power of analysis,—not in its narrow, mathematical sense, but in its broadest aspects. And he insisted that the instruction should be basic, devoting itself to the fundamentals which lie at the root of the profession of electrical engineering, believing that to subsequent experience should be left the acquirement of that practical knowledge which is the stock in trade of every engineer. In short, the object of the course was to turn out men fitted to become engineers, not to turn out engineers. And in this the course differed materially from that pursued in many institutions. Taking this idea as a basis, all members of the department had much at heart a simplification of the curriculum and the working out of a course with the proper perspective, with just weights assigned to all the related branches of engineering, and much progress has been made in that direction.

To one with Professor Clifford's broad views of what an engineer-

ing education should be, it is not surprising that he devoted himself with enthusiasm to the development of graduate work, especially in the field of Power Transmission and Advanced Theory of Alternating Currents. The lectures in these courses were most stimulating, the deductions often being in advance of current practice, and frequently the difficulties which would be encountered in the practical working out of proposed schemes would be clearly noted. The development at the Institute of a strong post-graduate course in electrical engineering, which would attract the best graduates of the best technical schools in the country and give them the most advanced instruction obtainable in any school on this side of the water, was one of Professor Clifford's dearest projects. To the development of this work he looked forward with the eager desire of an enthusiast. Appreciating that fruitful investigation requires thorough preparation and an intimate knowledge of the nature of the problems arising in electrical industries, plans for this class of work were broadly conceived, the foundation being laid in thorough advanced instruction to be taken not only by the graduate students, but by the younger members of the instructing staff, that they might develop to meet their new duties in superintending investigations.

The keen appreciation of the fact that the Institute exists to serve the public, and that to do this effectively requires a close connection with those responsible for great engineering developments, led to the organization of an advisory committee, the members of which are men of national reputation. That they consented to serve is a striking testimony to the interest of men of large affairs in educational questions. This committee differs from the visiting committees connected with other institutions, in that many of its members have no other Institute connection.

The foregoing detailed consideration will show why Professor Clifford's administration was so rich in results to our students in electrical engineering.

There were numerous activities in which he was engaged outside of the Institute, which contributed their part and reacted for the advantage of the student body. These activities resulted in a wide acquaintance with men of science and affairs throughout the coun-

try, Professor Clifford being a member of the American Institute of Electrical Engineers, serving on the Board of Managers and Past Chairman of the Boston Branch; a member of the Illuminating Engineering Society, the National Electric Light Association, the Society for the Promotion of Engineering Education; a Fellow of the American Academy of Arts and Sciences and of the American Association for the Advancement of Science; a member also of the Circolo Mathematica di Palermo. The New York University Club and the Brae-Burn Country Club also include his name in their lists of members. To the acquaintance brought about by the membership and participation in the activities of these professional and social societies, must be added that which naturally arises from the practice of the engineering profession, for Professor Clifford has done much work of a consulting character. He has been referee in many engineering disputes of magnitude, has been entrusted with the scientific preparation of patent cases of importance, has done development work for several companies, and has been, and is now, retained by a number of companies of standing.

The professionalism of the old-time teacher never has laid its heavy hand on Professor Clifford, and many a young man can and does say that his first serious efforts toward ultimate success date from one of those intimate and personal conferences which resulted from his presentation of the difficulties which beset him, both within the Institute and without it. Some were encouraged and some admonished, as was needful, and many a man sorely pressed financially has been put in touch with those whose pleasure it is to assist at such a crisis in a young man's career. These things, entirely outside the so-called necessary duties of the teacher, account in great measure for the tremendous personal hold which he has had on his students. Always presenting the highest ideals of what an engineer should be, both in his profession and in his attitude toward the public, hating shams of all sorts, and insisting on the fundamental things, Professor Clifford's view of what a scientific education should accomplish cannot be better summarized than in the epigram quoted by Professor Palmer,—"That's what education means, to be able to do what you have never done before."

F. A. Laws, '89.

TESTS OF CONCRETE BEAMS

How the Laboratory of Applied Mechanics is contributing to the Knowledge of the Engineer

The Mechanical Engineering Department is carrying on an investigation of the breaking strength and methods of failure of re-enforced concrete beams of unusual proportions. The form of beam which has been most frequently tested and regarding which the most information has been obtained in the past is what may be called the typical floor beam as it is used in the ordinary type of re-enforced concrete building. The usual span of such a beam is about sixteen feet, and its depth from eighteen to twenty inches. In engineering structures, however, the loads are often so great that it becomes necessary to use beams and girders of less than half the above length and twice their depth. With such proportions, engineers know very little about the nature of the stresses in re-enforced concrete, and there is considerable doubt as to whether the beam acts like the ordinary type in deflecting or whether it supports its load in the manner that an arch does. A set of twelve specimens, thirty inches deep and varying in length from six to twelve feet, and a like set of just half the linear dimensions, have been presented to the department by the Ambursen Hydraulic Company. These are now being tested by students, under the direction of the instructing staff, as thesis work; and it is expected that the results will be valuable, not only for themselves, but as showing the relative merits of small and large sized test specimens.

The Laboratories of Applied Mechanics at the Institute are especially well equipped for the testing of all forms of concrete specimens. They contain machines capable of breaking columns up to one foot square by crushing, two beam machines, the larger of which applies and measures loads up to one hundred thousand pounds, and a four hundred thousand pound arch-testing machine of special design, which is at present being used for beam tests.

The work of the department in concrete testing extends over a period of seven years, during which time there has always been some series of tests in progress.

One of the most interesting of the series was that in which re-enforced concrete columns were subjected to fire conditions, the entire column being treated to a high temperature under load and then one side of it suddenly cooled by the application of a stream of water. The beam tests, too, are not only valuable for the engineering data they afford, but are highly interesting to the layman. The neutral axis, or unstressed longitudinal section, of a re-enforced concrete beam under load is impossible, apparently, of theoretical determination, and experimental data are necessary for the successful use of these beams in structures. To obtain accurate and useful data of this kind, many tests must be made, and measurements of the most delicate character taken. The work includes, for instance, the measurement of the strain, elongation or compression of the beam at five or six points from top to bottom, when the load is applied, and at regular intervals for some time thereafter. All tests made in the department are, of course, carefully tabulated, and many of the standard figures for the strength of materials which engineers use throughout the country were determined in this laboratory.

A Grant for Research

The Carnegie Institution of Washington has made a grant of $3,000 to Dr. Arthur A. Noyes, Acting President of the Massachusetts Institute of Technology, to be used in promoting research on the properties of solutions in relation to the ionic theory, which is being carried on in the research laboratory of physical chemistry at the Institute.

This is the sixth grant which has been extended to Dr. Noyes for this work, but is larger than in the previous years.

TECHNOLOGY WINS THE PRIX DE ROME

E. I. Williams ('08) was the winner, in January, of the Scholarship in Architecture of the Academy in Rome. The prize is the highest in value and in honor offered to American architectural students. Technology was in competition with Harvard, Columbia, Pennsylvania, George Washington University at Washington, Cornell, University of California, Washington University and University of Illinois. The winning of the Prize of Rome from such competitors means far more to Technology than the simple honor conveyed. It means an achievement due to our school methods and training, for Williams' practical experience was limited to three summer vacations spent in an architect's office.

Williams was born at Rutherford, N.J., Oct. 5, 1884, where he attended school till his thirteenth year. He then went to Europe to the Château de Lancy School, near Geneva, and remained there nearly twelve months. Afterwards he lived in Paris, and attended the Petit Lycée Condorcet for six months more. He then returned to the United States, and attended the Horace Mann High School in New York city for three years, after which he entered the office of H. S. Goss, mechanical engineer, and worked there two years and a half as draughtsman and patent office man. He then came to Tech, undecided what course to take up, but expecting to study architecture rather than mechanical engineering, which had at first appealed to him. It needed but a short time to decide in favor of architecture, in which success came to him from the start.

Williams is now completing his graduate year at Technology before departing for Rome. He has fairly won this great prize. His undergraduate record at Technology tells of all-round ability, thoroughly cultivated. A first-rate scholar, he was also a prominent member of his class, serving on both baseball and football teams and on other minor organizations. He was president of the Architectural Society of the Institute during his senior year,

and was a general favorite. All good wishes will go with him, and the Academy in Rome may well be congratulated on its happy choice, and the Institute may rejoice on being represented by one who is sure to reflect great credit on the school.

LECTURES BY MONSIEUR BERTIN

For a considerable time a system of lectures has been arranged each year by the department of naval architecture to enable students to hear and become acquainted with the leaders of their profession. This arrangement is made possible by the liberality of a friend of the Institute.

A notable feature this year will be a series of lectures by Monsieur W. E. Bertin, chief constructor (retired) of the French navy, who has kindly consented to undertake the voyage to this country for that purpose.

The course is expected to begin on or about the 12th of April, and will include the following subjects: 1. Les vagues de la mer. 2. Giration du navire-à-vapeur. 3. Stabilité du navire-de-combat après avaries. 4. Les progrès de la navigation du commerce-à-vapeur, en prenant pour example la Cie transatlantique Française.

The French have long been recognized as leaders in the theory of naval architecture and in the practice of shipbuilding, and among them Monsieur Bertin is recognized as the exponent of their ideal combination of scientific attainment and practical ability. He is as well known for his designs for ships, both naval and mercantile, as for his scientific treatises and experimental investigations. The titles of his lectures give some idea of the range of his activities. He has been naval constructor, scientific expert, director of the governmental school for naval constructors and chief constructor. He is an officer of the first class of the Legion of Honor, a member of the Association Technique Maritime, of the Institution of Naval Architects and of the Society of Naval Architects and Marine Engineers.

C. H. Peabody.

THE SOCIETY OF ARTS

With the lecture on April 5 by George E. Hale ('90), director of the Mount Wilson Solar Observatory at Pasadena, Cal., on "Solar Cyclones and Magnetic Fields," the season of the Society of Arts will come to a successful close.

During the winter it has offered to its members and to the Boston public a series of addresses on a wide range of scientific subjects; and, although presented by specialists, they have appealed to the layman as well as to the expert.

Since mention was made of the Society of Arts in the January Review, Dr. William H. Walker, director of the Laboratory of Applied Chemistry of the Institute, gave an address on "The Corrosion of Iron and Methods of Preventing it." Dr. Walker's paper was a remarkable one, and has stirred up a great amount of interest all over the country.

On January 28 a large audience assembled in Huntington Hall to hear Dr. Steinmetz talk on "The Future of Electricity." The birth of Charles Darwin was marked by a meeting of this society, at which Professor Sedgwick, of the Biological Department, and Professor Percival Lowell, non-resident Professor of Astronomy at the Institute, discussed the influence of Darwinism in clearing the way for an acceptance of the proper aspects of evolution. Huntington Hall was nearly filled with a very enthusiastic and appreciative audience.

On January 21 Professor Jaggar delivered a lecture on the Messina earthquake, which was widely reported and excited much interest all over the country.

Lectures were given by Dr. Charles E. Lucke, of Columbia University, on "Gas Power," Mr. H. C. DuBois, of Philadelphia, on "The Salting of Mines," and Professor Robert S. Woodward, president of the Carnegie Institution, on "The Larger Research Problems of the Carnegie Institution."

AMONG THE UNDERGRADUATES

The General Advancement of Student Social and Athletic Interests—Junior Week will be one of Gayety

The most important advancement in undergraduate affairs to be noticed since the last issue of the REVIEW centres in the Institute Committee, which has made certain changes in the point system, and installed a book-keeper and stenographer at the office in the Union, where all the clerical work for the various activities is now done. In another column, members of the Institute Committee have described the working out of these two matters in some detail.

The students are now preparing for Junior Week, which begins April 19. The most important feature is the Show, which will be given at the Hollis Street Theatre, in Boston, Tuesday and Thursday afternoons. The Show will also exhibit at Northampton, where it made a great success last year, and it is also hoped that arrangements will be made to go to Providence this season, making two trips out of town. The play this year is entitled "That Pill Grim," and it is said to be the best book that has ever been offered. The scene is laid in Holland and America, thus giving an opportunity for many ludicrous situations and bright local hits. The lyrics of the Show are excellent, and it is expected that the Tech Song Book will get some valuable acquisitions from this year's effort.

The 1910 *Technique* will be published on April 17. This is the twenty-fourth edition of the *Technique*, the enterprise having been started by the class of '87. The Technique Board consists of sixteen members of the junior class elected by an electoral committee of twenty-five. On the day the book is published, April 17, will occur the Technique rush, which is unique and attracts large crowds of spectators each year. The first hundred copies of the book are taken to a shanty which is erected on the tennis courts back of the Art Museum, the first twenty-five copies being num-

bered on the cover and signed by President Noyes. The rush takes place at 12.15, and five or ten minutes before that time the men begin to struggle for a good position near the shanty. At ten minutes past twelve a gun is fired, another at fourteen minutes past, and the final gun at exactly quarter past, when a small door near the top of the shanty is opened and the first hand that is put in receives book number one. The books are handed out in the order of the numbers, the first five being free to those who secure them. The *Technique* this year is said to be fully up to its predecessors, which have the reputation of standing at the head of college annuals. It is looked for eagerly by the professors as well as the students. Price of the book is $2. All alumni who desire copies can have them sent by express for $2.40, prepaid.

Junior Prom, Technology's most important social event, has been completely arranged, and will take place on Wednesday evening, April 21, at the Hotel Somerset. This is an event to which all Tech men look forward with a great deal of interest, and every effort is being made by the committee in charge to have this year's Prom eclipse all others. The support that has been forthcoming from the student body would warrant a whirlwind success. The matrons will be Mrs. Curtis Guild, Mrs. Eben S. Draper, Mrs. Samuel J. Mixter, Mrs. Richard C. Maclaurin. The patronesses will be Mrs. William T. Sedgwick, Mrs. Frank H. Rand, Mrs. Alfred E. Burton, Mrs. George F. Swain, Mrs. Dugald C. Jackson, Mrs. Henry P. Talbot, Mrs. Desiré Despradelle, Mrs. Harry E. Clifford, Mrs. Chauncy C. Batchelor, Mrs. Davis R. Dewey.

Elsewhere in the REVIEW is an article showing Technology's status in intercollegiate athletic sports, which will be read with interest. Up to the time of examinations every Institute team was practically unbeaten, and the New York *Sun* said: "The Massachusetts Institute of Technology is one of the leading institutions of the country in minor sports, apparently. In cross-country running, hockey and basket-ball, M. I. T. is as good as the best. Beating Harvard, Dartmouth and Williams is a good record for the basket-ball men thus far this season." The Athletic Association now proposes to incorporate the different sports under one head and

issue season tickets admitting the holder to all games and meets. The money obtained from the sale of these tickets will be apportioned to the various activities according to their importance and financial requirements.

There has been but one convocation during the last three months. On February 11 Mr. Horace White, formerly editor-in-chief of the New York *Evening Post*, spoke to the students in Huntington Hall on his personal recollections of Abraham Lincoln, with whom he was associated for many years.

Among the speakers whom the undergraduate committee has obtained for the Friday night talks at the Union, and to whom an average crowd of 150 fellows has listened with interest, have been Mr. James O. Fagan, Lieutenant W. B. Tardy, U.S.N., Seth K. Humphrey, Louis Brandeis and the Rev. Dr. Charles Fleischer. These meetings will be continued until the middle of May, when the annual examination period begins.

The Tech has been somewhat handicapped by necessary changing about of editors, but it has been very creditably conducted, and prints the news without fear or favor. Those of our readers who would like to be in close touch with the Institute every day will find *The Tech* a cheerful visitor to the reading table. Subscription can be begun at any time, and the important events of the year are now just approaching.

Reunion Song Leaflets

The Reunion Committee has had the words and music of several Tech songs to be sung at the Reunion printed in pamphlet form for use of classes and alumni associations who desire to practise them.

A great deal of attention will be given to the practice of singing preparatory to the Reunion. Most of the younger classes get together once a month for this purpose, and it is proposed to have a general convocation of alumni at Huntington Hall to practice Reunion songs.

ALUMNI HERE AND THERE

Plans for Reunion Uppermost—Enthusiasm is increasing Everywhere—Two More Alumni Associations—New York Club House

Since the January REVIEW was published two new local Alumni Associations have been recorded, one at Milwaukee, Wis., and the other at Detroit, Mich. Everywhere there is great enthusiasm over the Reunion. Men are coming to Boston who have not been there for years. This increased interest is helping the local associations, and should be fully taken advantage of by good work on the part of the officers.

WASHINGTON SOCIETY OF THE M. I. T.—At the annual meeting of the Washington Society at the University Club, January 12, the following officers were elected: Marshall A. Leighton, president; F. F. Longly, vice-president; A. M. Holcombe, secretary, 1404 Massachusetts Avenue, N. W.; G. R. Jones, treasurer; F. C. Willard, member of the executive committee.

The annual dinner of the society was held February 18, at Rauscher's Restaurant, in honor of Dr. Richard C. Maclaurin, president of the Institute. Mr. Marshall O. Leighton ('96) presided, and the invited guests, in addition to Dr. Maclaurin, were Hon. Elmer E. Brown, United States Commissioner of Education; Rev. Joseph Himmel, president of Georgetown University; Hon. Tulio Larrinaga, resident Commissioner from Porto Rico; Dr. Charles W. Needham, president of George Washington University; Dr. Robert S. Woodward, president of the Carnegie Institution of Washington; and Mr. I. W. Litchfield, editor of THE TECHNOLOGY REVIEW. The attendance was the largest in the history of the society, there being sixty-seven present.

The banquet hall was hung with Tech banners, large and small, and red carnations adorned the tables. The dinner was enlivened

by songs between the courses, the favorite with both old and young alumni being "Dear Old M. I. T." from the song leaflet published for the June Reunion, a copy of which was at every place. Dr. Maclaurin was greeted with a rousing M. I. T. cheer and "Long live the President" sung standing, and, judging by the earnest attention with which his ideas as to the future of the Institute were received, and the hearty applause following his appeal to the alumni for financial support to insure its continued independence, he will find the Washington Society with him in any move he may make for a bigger and better Tech.—*A. M. Holcombe, Secretary.*

THE TECHNOLOGY CLUB OF PHILADELPHIA.—The annual business meeting and election of officers of the Technology Club of Philadelphia took place on January 23 at the new Y. M. C. A. Building. The following officers were elected for 1909: president, James Swan ('91); vice-president, Frank H. Keisker ('97); secretary-treasurer, Percy E. Tillson ('06), 419 Y. M. C. A. Building; executive committee, Frederick A. Hunnewell ('97), Edgar P. Trask ('99), Eugene S. Foljambe ('01), George M. Spear ('02), Ernest Harrah ('04), H. Le Roy Walker ('05).

An informal dinner was served before the meeting. Mr. Andrew Wright Crawford ('96), secretary of the City Park Association, presented a very interesting paper on "Parks and Park Systems." He urged that engineers and architects should take an active interest in the subject of parks because of the very close relation between park systems and the general city plan. He showed that a good park system should conform with the general arrangement of the city, and illustrated his points by the good and the bad examples offered by different American and European cities.

An informal dinner was held on Saturday evening, February 27, at the City Club. Mr. Arthur W. Ayer ('90), of Harrison Brothers & Co., spoke on "The Problems of the Paint Manufacturer." He explained some of the methods now employed in testing the wearing qualities and action of paints, and he spoke particularly of the studies that are being made in regard to the composition and uses of paint in preventing the corrosion of structural iron and steel.—*Percy E. Tillson, Secretary.*

TECHNOLOGY CLUB, BOSTON.—The first "Ladies' Night" of the season was held on December 22, when Mr. William Lyman Underwood told of his experiences in "Hunting Big Game in New Brunswick with Canoe and Camera." Mr. Underwood spoke in his usual delightful style, and showed a number of beautiful and remarkable photographs of wild animals. Since that time three "smoke talks" have been given. On January 22 Professor Henry E. Crampton, of Columbia, gave a most interesting account of his travels in Tahiti and the Society Islands. On the 9th of February Professor A. Lawrence Rotch talked on "Aërial Navigation," and illustrated the development of the methods of aërial travel from the time of the Montgolfiers first balloon up to the present airship of Zeppelin and the aëroplanes of the Wright brothers. The seventh talk of the season was on March 2, when Professor D. W. Johnson, of Harvard, spoke entertainingly of a wagon trip through parts of New Mexico, Utah and Arizona, touching on his experiences in the deserts, the petrified forests, and in and about the Grand Canyon.

Two new bookcases have been placed in the common room, and the librarian hopes gradually to increase the club's library.—*Robert S. Williams, Secretary,* 83 Newbury Street.

TECHNOLOGY CLUB OF THE MERRIMACK VALLEY.—The annual meeting and dinner was held at the Franklin House, Lawrence, Mass., on Monday evening, February 8. The following officers were elected for 1909: president, R. A. Hale ('77), Lawrence; vice-president, C. H. Eames ('97), Lowell; secretary, J. A. Collins, Jr. ('97), Lawrence; treasurer, W. O. Hildreth ('87), Lowell; member executive committee, P. R. French ('00), Lawrence; delegate to the Alumni Council, George Bowers ('75), Lowell.

Dinner was served at 7.30 P.M., after which Professor Burton, Dean of the Institute, talked on "Recent Changes in Student Life." The subject was a very interesting one, as most of the men present were unfamiliar with the new relations between the Dean and the student body.

Twenty-six members were present, as follows: Hale ('77), Ripley ('00), French ('00), Hobson ('06), Coey ('06), White, Keables, Bowers, Miller ('09), Barker ('96), Simpson ('90), Carney ('93),

Eames, Collins ('97), Hildreth ('85), Hildreth ('87), Sjöstrom ('88), Wright ('86), Adams ('91), Adams ('06), Scott ('01), Walker ('06), Chase ('74), Bowers ('75), Alter ('11), Enhler ('05).—*J. A. Collins, Jr., Secretary.*

NORTH-WESTERN ASSOCIATION OF THE M. I. T.—The last meeting that the association will ever hold in the banquet hall of the old University Club goes into the history of the association as one of the most successful ever recorded. It was not, perhaps, the largest dinner that the association has ever held, but its members exhibited more practical interest in the problems relating to the Institute than was ever shown before, and, having passed through a period of stress of its own account, it goes forward with old-time enthusiasm and a deeper determination to be a large factor in the advance of old Technology.

The dinner of February 20 was full of life, incidental divertisements, and good fellowship, and we gave our President-elect, Dr. Maclaurin, who was our guest, a most hearty welcome. The other guests were Professor Sedgwick, whom we have not had the pleasure of hearing in Chicago before, and I. W. Litchfield, of THE TECHNOLOGY REVIEW. There were nearly one hundred men present, including delegates from Minneapolis, Milwaukee and various points in Iowa, Indiana and Illinois.

The banquet hall at the University Club, which was decorated with smilax and flowers, never presented a more attractive appearance. A large electric sign about twelve feet long, spelling "Maclaurin" in electric lamps, was fixed to the front of the gallery, directly in front of the speakers' table. When the men entered the dining-hall, before sitting down they gave a long cheer for the President-elect as his name flashed out. Johnny Hand's orchestra, with Johnny himself to lead it, was located on the floor between the two wings of the table, while the official noise committee on one side vied with a self-appointed noise committee on the other in rendering Tech songs and parodies on popular songs which referred to the personal characteristics of certain gentlemen present.

John Shortall ('87), president of the association, presided at the

dinner, and introduced in succession Dr. Maclaurin, Professor Sedgwick, Theodore Robinson ('84) and I. W. Litchfield ('85), of Boston. Dr. Maclaurin made a most excellent impression on the men. His speech indicated the extent to which he has studied the history and traditions of the Institute, as well as his knowledge of educational institutions and methods throughout the world. He declared for a continuation of the policies to which Technology had so successfully stood, and for improvement in the facilities for teaching laboratory work and research. His mention of a necessity for new buildings on a new site brought forth approval of applause from every man present.

Professor Sedgwick received an ovation from the men when he arose to speak. He presented Technology as it stands among other educational institutions and told us of the wonderful spirit of co-operation that pervades the Faculty. He also told us that the most important problem before Dr. Maclaurin was the acquisition of the right kind of men to be professors and teachers at the Institute. He outlined how the alumni could help directly in this and other ways.

Mr. Litchfield spoke more especially on the improved conditions of social life at the Institute and the Technology Reunion which is to come in June.

The North-western Association talks of filling a train with men from Chicago and near-by cities, and the Reunion committee can rest assured that Chicago will do the proper thing.

The new officers of the association are: Edward M. Hagar ('93), president; Richard E. Schmidt ('87), vice-president; Ernest Woodyatt ('97), 1615 Ashland Block, Chicago, secretary-treasurer; Frederick K. Copeland ('76), Meyer J. Sturm ('96), George H. Lukes ('92), Philip W. Moore ('01), executive committee.—*Ernest Woodyatt, Secretary.*

Technology Club of Buffalo.—On January 26 we had a most interesting meeting at the University Club, with sixteen members present. W. H. Watkins ('95), manager of the dyeing department of Schoellkopf, Hartford, Hanna Company, gave us a

highly instructive talk on "Dyeing and Dyestuffs." The subject was fully discussed by those present.

The approaching Technology Reunion was talked over fully, and the club has decided to make arrangements to attend in a body.

Our next meeting will be held at the University Club on March 24, when we expect to hear a paper on "By-product Coke."—*H. A. Boyd Secretary, Erie County Bank Building.*

TECHNOLOGY CLUB OF DETROIT.—The winter meeting of the Detroit Technology alumni was held at the University Club on the night of February 22. Thirty-one Tech men were present, besides the three guests. Mr. Julian Harris, the vice-president of the University Club, in a very happy manner welcomed the Tech men in behalf of the University Club. Mr. Alexis C. Angell in behalf of the University of Michigan welcomed Dr. Maclaurin. Dr. Maclaurin was introduced by Prof. George W. Patterson ('87). Dr. Maclaurin made a most pleasing address and most favorable impression. Mr. Whitney acted as toastmaster, and Mr. Kales led the cheering, which was very enthusiastic. Mr. Donald presided at the piano.

As this was our first attempt at singing, the results were very satisfactory, and everybody entered in with a great deal of spirit. Through the Reunion committee we were furnished with leaflets with some of the Technology songs, which added much to the pleasure of the evening.

This was our second meeting, the first having been held in the summer at Lake St. Clair.

The following men were present at the winter meeting: W. R. Strickland ('98), Professor Emil Lorch ('93), Professor G. W. Patterson ('87), Mark W. Allen ('97), G. R. Anthony ('98), Frank C. Baldwin ('90), William M. Corse ('99), George Cook, W. R. Burroughs ('08), F. H. McGuigan ('08), J. H. Dennedy ('08), Harry W. Donald ('05), Herbert J. Lord ('98), Walter M. Newkirk ('92), Oliver M. Davis ('01), Charles F. Hammond ('91), H. E. Hathaway ('91), William R. Kales ('92), Herbert G. King ('75), Currier Lang ('04), Ralph D. Morris ('03), George Valentine Pottle ('01), W. C. Reed Hill ('94), Waldemar S. Richmond ('05),

George H. Ropes ('94), A. Forrest Shattuck ('91), Edward A. Sumner ('97), Warren C. Taylor ('02), Granger Whitney ('87), H. T. Winchester ('03), Maurice Black ('96).

The Detroit association was formed in August last, and is governed by an executive committee consisting of Currier Lang ('04), Herbert J. Lord ('98), William R. Kales ('92), Marvine Gorham (93) and Granger Whitney ('87). We should like to get in touch with the Tech men in Toledo and vicinity.—*Granger Whitney, Secretary.*

Inland Empire Association of the M. I. T.—We were to have held our annual meeting on January 22, but about three days before that date there came an early thaw, which resulted in such unusual floods and wash-outs that travelling was difficult or impossible for some time. The meeting was therefore postponed.

On February 18 we called a meeting to meet Professor Roberts ('90), who was until last June at the head of the Civil Engineering Department of the Washington State College, Pullman, Wash. Professor Roberts is now in charge of the water-works installation for the town of Medford, Ore. The dinner was made memorable by the fact that we had with us our only co-ed in this part of the country, Miss Greta Gray. The annual election resulted in the selection of the following officers: Shirley S. Philbrick ('98), president; William J. Roberts ('91), vice-president; Philip F. Kennedy ('07), secretary, 1129 Hamilton Street, Spokane, Wash.; Francis F. Emery ('81), J. F. Green ('08), E. R. Crane ('04), executive committee.

It was voted that the president and the secretary should form a committee to extend the congratulations of the association to President-elect Maclaurin.

The matter of the Reunion was talked over, and, although we are a long distance from the Hub some of us have already made arrangements to be in Boston, June 7.—*Philip F. Kennedy, Secretary.*

Technology Association of Northern California.—On February 3 the above association had an informal and very social evening at the Bismarck Café. Of the twenty-two present,

four were with us for the first time and each of them in their little talks told how glad they were to be there. Mr. Wilson ('90), gave a most interesting talk, and ended up by inviting the association as a body to go out in his yacht. Nearly every one present gave short talks on different men who had, and in many cases were, still moulding and making Alma Mater what she is today. With the exception of letters from President Maclaurin, Dean Burton, the REVIEW, Mr. Humphreys and some clippings that were read by President Hyde and the secretary, the trend of the conversation of the entire evening was in appreciation of the many true Tech men.

During the evening there were many songs and cheers, and every one was very enthusiastic. As place cards at the table, each received a booklet containing the list of members and their addresses. With the singing of "Dear Old M. I. T." the party broke up. It was declared the finest yet.

Those present were: Hyde ('96), Merrill ('05), Philbrick ('02), A. J. Krafft ('07), E. J. Krafft ('07), Fraser ('05), Leland ('91), Spencer ('06), Bowie ('96), Carr ('06), Dyer ('06), Loring ('99), McKebben ('07), Ferry ('03), Hileman ('09), Smith ('04), Atkins ('04), Pearse ('01), Wilson ('90), Kriegsman ('05), Meade ('99), Blake ('06).

Our next meeting was at the Hotel Manx, where we have established a Tech luncheon every Monday between twelve and one o'clock. At these lunches we are able to meet for a short time, and the spirit of good fellowship cements the ties of Tech friendship more firmly.

We have to date had three such lunches, averaging eleven members, and later on we expect a gathering of at least twenty weekly.

On March 4 the association had a Bohemian evening at one of San Francisco's Mexican restaurants. The surroundings and the dinner were entirely Mexican, and with the exception of talks by the president and secretary on the coming Reunion and a word of parting to one of our strongest and most earnest Tech men, Langdon Pearse ('01), the evening was spent in jollification and in surmising what we were eating. Hearty welcomes were extended to a new-comer, J. Ross Wade ('94), to E. M. Chadbourne ('03), who

had just returned from the east, to Mr. Stebbins ('93), Mr. Walker ('06), and Mr. Foss ('08), all new-comers. Mr. Foote ('99), received a very hearty welcome, as he had a long trip to make from Grass Valley to San Francisco. All of the above responded with short talks, and at the close of the dinner, which was one of our largest, thirty being present, every one declared it a great success.

Those present were: Hyde ('96), Walker ('06), Merrill ('05), Leland ('91), Philbrick ('02), Willard ('76), Devlin ('05), Spencer ('06), Bowie ('96), Carr ('06), J. Ross Wade ('94), Foss ('07), A. J. Krafft ('07), E. Stebbins ('93), Lichtenstein ('06), Eaton ('05), Atkins ('04), Hersam ('91), Clarke ('06), Mahen ('87), Chadbourne ('97), Wilson ('90), E. J. Krafft ('07), Kriegsman ('05), Hileman ('09), Fraser ('05), Nickerson ('04), Foote ('99), Dyer ('06), Blake ('06).

Our next meeting will be a ladies' theatre party at the Van Ness Theatre, San Francisco, April 6, 1909.—*H. C. Blake, Secretary.*

THE PITTSBURG ASSOCIATION OF THE M. I. T.—Since the last issue of the REVIEW the Pittsburg alumni association of the Massachusetts Institute of Technology has certainly been in the lime-light.

Something has happened in Pittsburg. We have come to realize that our latent forces have been too long dormant, and have now been rejuvenated by the event of an annual dinner, unprecedented in glory in the history of this association. Our special attractions at this dinner, which occurred at the University Club on February 19, were interesting.

We had the extreme pleasure of having with us Dr. Maclaurin, our President-elect, who by his delightful personality and charming manner endeared himself to the loyal heart of every Tech man in the Pittsburg district. Our second guest was Dr. William T. Sedgwick, our dearly beloved and faithful member of the Faculty, who told us what Tech is, what Tech ought to be and what Tech will be. Our third guest, last, but not least, was our loyal alumnus, Isaac W. Litchfield ('85), managing editor of the REVIEW. He told us about the prospects of THE TECHNOLOGY REVIEW and of our obligations as loyal alumni whose support the Institute needs.

We had one of the most delightful evenings that has been experienced for some time, and we also had some good things to eat. In fact, our *bill of fare* was fit for the king's table. We ate, drank and were merry. Amidst our festivities our feelings heartily burst forth in the songs of "Dear Old M. I. T.," "Take me back to Tech," "On Rogers Steps," "Retrospection," etc.

There were over seventy loyal sons who attended this affair, and we were glad to note that they represented classes from '75 to '10.

The executive committee has planned for the coming season a series of smokers which will abound in good fellowship and amateur as well as professional fun. We hope these smokers will thoroughly cement the friendship and interest of every member of the society. The dates for same will be published in the near future, and we extend a cordial welcome to all Tech men who may be sojourning in this district.

Our association will place all alumni associations of the Institute on its mailing list, in order to acquaint them with our doings, and trust they will return the courtesy.

Our association suggests that a pamphlet of songs without music be printed, so that the different alumni associations can use them at their meetings. We ourselves can use three hundred copies of such.

We announce the election of Warren I. Bickford ('01), as our representative to the Alumni Council.

The officers for the ensuing year: L. K. Yoder ('95), president; Sumner B. Ely ('92), vice-president; Waldso Turner ('05), secretary-treasurer; C. Snelling Robinson ('84), Henry H. D. Shute ('92), executive committee.—*Waldso Turner, Secretary-Treasurer,* 1174 *Frick Building Annex, Pittsburg, Pa.*

THE TECHNOLOGY CLUB OF NEW YORK.—The President-elect of the Institute, Dr. Maclaurin, was welcomed by Technology men in New York at the annual dinner of the club at Delmonico's, Saturday evening, Feb. 6, 1909. The dinner was preceded by a reception to Dr. Maclaurin, and the opportunity thus afforded of personally meeting and talking with him was most enjoyable. The president of the club, Professor Charles R. Richards ('85),

and the former president, Alex. Rice McKim ('86), stood beside Dr. Maclaurin, and they were joined by Dr. Davis R. Dewey, of the Institute, Dr. Alexander P. Humphreys, president of Stevens Institute and Dr. James F. Norris, president of the Technology Club of Boston.

As the men entered the reception-room, they were each announced and introduced. Dr. Maclaurin won the hearts of all, and he will go to the Institute with the loyal support of New York Tech men.

The arrangements made by the dinner committee, Harold Binney ('88), Walter Large ('79), P. A. Warner ('92), Clarence M. Joyce ('03), and Kaludy Spalding ('89), were in every way successful. The souvenirs were Tech Song Books, and William D. McJennett ('94), led the singing at the singer's table. About one hundred and twenty-five men were present at the dinner. President Richards opened the festivities by congratulating the club on the election of Dr. Maclaurin as president of the Institute, and introduced as toastmaster Harold Binney, who, in turn, happily welcomed Dr. Maclaurin in behalf of the club and New York Tech men, and called upon Mr. McKim to lead in a long M. I. T. cheer for the new President. The cheer was enthusiastically given, and Dr. Maclaurin's address received the closest attention and appreciation. At the close of his remarks all the men rose, and joined in singing "Prexy for Aye," and a resolution was unanimously passed extending to the Corporation of the Institute the heartiest congratulations of the club on their choice of Dr. Maclaurin for the Presidency.

Mr. Binney then introduced President Humphreys, of Stevens Institute, who in the course of his remarks referred in complimentary terms to Professor George V. Wendell ('92), which aroused such a series of cheers that it was necessary for Professor Wendell to rise and bow his acknowledgments. Dr. Humphreys also received the M. I. T. cheer as an expression of appreciation of his remarks and of the interest which Tech men have in sister technological institutions. Dr. Dewey was the next speaker, introduced by Mr. Binney as representing the brains of the Institute,

as necessary in directing as the Corporation in maintaining the work of Technology. Dr. Dewey gave an interesting summary of Tech affairs, and brought home to us many happy recollections of the Institute. Dr. Norris, the last speaker, told us of the increasing activities of the Boston Technology Club and of the Alumni Association, and expressed the desire, which we all feel, for a closer co-operation of the alumni with the Faculty and the Corporation.

The annual meeting was held in an adjoining room, thus insuring a larger attendance than heretofore. After reports by the secretary and the treasurer, a report was read by the nominating committee, comprising E. G. Thomas ('87), J. Parker Fiske ('89) and J. J. Donovan ('06), nominating as candidates for election to the Board of Governors, required by the constitution as recently amended by increasing the Board from five to ten members, of which six are elected annually, the following men: Walter Large ('79), for a term of five years, representing the classes '68 to '88; and Harold Binney ('88), Ira Abbott ('81), Francis C. Green ('95), C. M. Joyce ('03) and K. Spalding ('89), for terms of one year each, representing the membership at large. After the election of these men a report was made by Allston Sargent ('98), chairman of the committee on joint club-house with college clubs, that Tech men in New York had subscribed $9,000 of the $12,000 required of each club, whereupon, after enthusiastic remarks by several of the members, further subscriptions were made until the total amount of $12,000 was subscribed, and thus the plan of a joint club-house, so far as the Technology Club is concerned, was assured. Reports of other clubs are expected in the near future, but it is a source of congratulation that Technology is in the lead. After a vote of thanks to Professor Richards for his devotion to the club and his services as president, this important and most interesting meeting adjourned.

The new Board of Governors at their first meeting elected the following officers for the ensuing year: president, Harold Binney ('88), secretary; William H. King ('94), treasurer; James E. Barlow ('05). The following men were appointed chairmen of committees: Walter Large, membership committee; K. Spalding,

house committee; C. M. Joyce, entertainment committee; Allston Sargent, building committee; P. A. Warner, auditing committee; Harold Binney, finance committee. Ira Abbott was re-elected registrar, with a vote of thanks for his excellent work; and Francis C. Green was elected representative of the Technology Club of New York on the Council of the Alumni Association.

At a smoker held at the club-house Saturday evening, February 27, Dr. George A. Kunz, diamond expert of Tiffany & Co., gave a very interesting address on "The Diamond, how found and used in the Arts and for Ornament, with a Description of the Two Largest Diamonds ever found." Dr. Kunz illustrated his lecture with lantern slides, with diamonds in their original state, and with glass models of the largest diamonds.

As the lease of the present club-house expires May 1, negotiations are in progress for a new club-house to be used until the joint club-house is available; and the Board of Governors are considering the property, 17 Gramercy Park, South, which is in many ways very desirable.

The last smoker in the present club-house was held March 27, when Professor Charles M. Spofford, recently appointed to the Hayward Chair of Civil Engineering at the Institute, gave us an interesting address, illustrated by lantern slides, on "The Making of Structural Steel."

The annual reception and dance of the club will be held at the Waldorf-Astoria, April 16, 1909, and Dr. and Mrs. Maclaurin will be the guests of the evening.

The club is looking forward to the Reunion in Boston in June, and warning is hereby given that an enthusiastic New York delegation will be present.—*William H. King* ('94), *Secretary*, 36 *East 28th Street, New York City.*

A good live secretary can easily bring his class or alumni association up to concert pitch at this time when the men are showing such eager interest in Technology affairs. It is the duty of every executive officer to stir up the division of men intrusted to him, and make the most of the important events of 1909.

NEWS FROM THE DEPARTMENTS

Studying Volcanoes—Technology and the Public Health—Important Investigations by the Mechanical Engineering Department

DEPARTMENT OF GEOLOGY.—Professor T. A. Jaggar, Jr., of the Geological Department has been granted leave of absence for the second term. Professor Daly will take charge of the department during his absence. Professor Jaggar is preparing to go to Japan and the Hawaiian Islands. In Japan he plans the study of geophysical observatories, which have been established there to investigate earthquake phenomena, and, if time allows, to examine some of the volcanoes there. On his return to this country he will stop at Hawaii. He will spend most of the summer in order to study volcanic phenomena with special reference to the reported recent activity of Kilauea.

The Geological Department in association with the Volcanic Research Society of Springfield, immediately after the news of the Messina earthquake reached this country, raised a fund of nearly $1,000 to enable T. A. Perret, a distinguished volcanologist resident at Naples, to proceed at once to Messina as an associate of the department and make geological investigations, not only of the earthquake, but of the present condition of Mount Ætna.

Plans are being made for the establishment by the Institute of a Research Laboratory of Geodesy and Physical Geology. Its staff will consist of the officers of the Geological Department who are interested in physical geology and of the officers of the Civil Engineering Department who have to do with geodesy. Under this organization will be built the observatory, at which will be made continuous records of earth movements, and where research work may be done in terrestrial gravitation, magnetism and variation of latitude. It is planned to maintain, in connection with the

observatory, a small museum of geophysics, which will be open to the public. An important feature of the work of this laboratory will be its annual expeditions to distant points to make observations. It is planned to send such an expedition to Hawaii, under Professor Daly's direction, at some time during the present year. Advanced students of the Institute or other institutions will be welcomed for special work in this laboratory, the primary purpose of which is, however, the advancement of science.

Among the former work of the Institute on these lines might be mentioned the erection of the Geodetic Observatory in Middlesex Fells; Professor Burton's two eclipse expeditions to Naples in 1902 and to Martinique in 1906; Professor Hosmer's magnetic observatories in Labrador in 1905; the appointment of Professor R. A. Daly to the newly established professorship of physical geology in 1907; the gift in the same year of a seismograph from the estate of C. A. R. Whitney; Professor Jaggar's expedition for geophysical study to the Aleutian Island in 1907; and Mr. T. A. Perret's investigations at Messina in January of this year.

The Basch-Omori seismograph made in Strassburg has been received by the Geological Department, and awaits installation in the observatory at such time as that may be built. Two new petrographical microscopes fitted with mechanical stages have also been received. They will be used in graduate research work. These microscopes are the gift of Mrs. W. B. Rogers.

There are now six graduate students in the Department of Geology. Two of these are candidates for the degree of Ph.D., one of them being admitted to the candidacy last month. Two of the others are candidates for the degree of M.S. Mr. Clapp and Mr. Camsell are connected with the Geological Survey of Canada, Mr. Camsell being a permanent member of the staff. During the past summer Mr. Camsell investigated the gold deposits of Camp Headley, B.C., and the coming summer is to investigate the mineral resources of the Tulamun district of British Columbia.

Mr. Clapp began last summer a geologic and topographic survey of Vancouver Island, and will continue the work next summer. He was assisted in the field last summer by Mr. K. G. Chipman, a

graduate of the Institute of Technology in the class of 1908. Mr. Chipman will have charge of the topographic work next summer, and Mr. J. A. Allan, another member of the department and graduate student, will have charge of a third party on the island doing detailed geological work.

Mr. Roy H. Allen, Course III. ('05), has returned from Mexico to begin graduate work in Mining Geology. Mr. Allen since graduation has spent most of his time in Mexico, and for the last year and a half has been manager of the Sierra Plata properties in Chihuahua. He has begun work with a view to possibly becoming a candidate for a doctor's degree.

DEPARTMENT OF BIOLOGY.—There is great interest this year in the development of public health subjects, and especially in public health instruction. Professor Sedgwick, as a well-known advocate of this branch of science and education, has taken part in a new course at Cornell and one at Columbia, having lectured at Ithaca on January 8 and at Columbia University on February 1 and 8. To him was assigned the responsibility of giving the opening address at Columbia in a series of sanitary science and public health lectures which will extend throughout the second half-year. He has also recently given public addresses at the Carnegie Institute in Pittsburg and before the Alumni Association there and at Chicago.

Dr. F. J. Slack, director of the bacteriological laboratory of the Boston Board of Health, has been appointed a special lecturer in the Biological Department, and now gives the practical part of the course in municipal laboratory methods.

A new course in Industrial Hygiene is given this year for the first time to the fourth-year students in biology by Professor Winslow.

Professor Winslow spoke before the Middletown Scientific Association, Middletown, Conn., January 12, on "Water Supply, Water Pollution and Water Purification." On February 17 he spoke on Darwin at a Lincoln-Darwin memorial meeting at the Wellesley Congregational Church, making the Lincoln address. February 25 he spoke on "Defective Drainage," at a mass meeting in the interest of public health held by the South End Improvement Society at Parker Memorial Hall.

Professor Prescott and Mr. W. Lyman Underwood visited Florida during the midwinter recess, and made interesting observations there on the fauna and flora of the Everglades. Professor Phelps has recently developed still further his work on the disinfection of sewage, and is now serving as one of the chief experts on the Jersey City water case in which it is sought to purify a polluted supply by chlorine disinfection through bleaching powder rather than by ordinary sand filtration.

Plans are under way for an early transfer of the laboratories of the Sanitary Research plant now on Albany Street to Room 25, Henry L. Pierce Building, and the experimental filters to the vicinity of the pumping station at the calf pasture in Dorchester.

Department of Mechanical Engineering.—Two members of the Department of Mechanical Engineering are making, for their graduating thesis, an investigation of the effect of water vapor in the explosive charge in oil engines. The engine under test is a Mietz and Weiss two-cycle machine at the Wrentham pumping station. This engine operates with fuel oil, which is the residue left in the distillation of petroleum when the naphthas have been driven off. This fuel is pumped into the engine cyclinder, where it mixes with a considerable volume of steam previously introduced at low pressure, a small amount of air and a little cold water. The introduction of water vapor instead, as would be expected, of hindering the efficient operation of the engine, really contributes in a marked degree toward a satisfactory performance, not only preventing irregularities in the strength of the explosions, but also materially reducing the fuel consumption at given outputs. The subject has a very close relation to the advances which are being made in the design of all types of internal combustion engines.

In many localities where power plants must be erected the supply of water available for condensing steam is not sufficient unless it be used over and over again, wholly or in part. Plants of recent design often accomplish this cooling by spraying the water through nozzles arranged out of doors in a series of fountains above a shallow basin or reservoir. The temperature interval through which water can be cooled in this way and the loss of cooling water by

evaporation depends, of course, on atmospheric conditions. Through the kindness of the Schutte & Koerting Company of Philadelphia, the Institute has received a centrifugal spray nozzle of the type used for recooling water in this manner. The nozzle is to be set up in the court-yard of the boiler-house, and will be tested with water taken from one of the condensers in actual service.

Mr. Kenneth Moller, 1907, has resigned from his instructorship in the engineering laboratory to engage in the design and development of a fuel oil engine, a new type of two-cycle engine, to be manufactured in Providence. Mr. E. O. Hiller, for several years an assistant in the mechanical engineering drawing-room, and lately with a large blank-book manufactory in Holyoke, has taken Mr. Moller's place.

Department of Electrical Engineering.—Professor George C. Shaad is revising his section on electric lighting in the text-book of the American School of Correspondence.

An inspection of the present location of the graduates in electrical engineering of the class of 1908 shows that they are distributed throughout thirteen states in the United States as well as in the Philippine Islands, Canada, Europe and Australia. Ten per cent. of the class are in teaching positions, and one student is taking a post graduate course at the Institute.

Professor D. C. Jackson has recently published a report as to the advisability of installing a municipal electric lighting plant in the town of Brookline.

The senior class in Electrical Engineering left on Tuesday, March 23, for the annual inspection trip. The party under the direction of Professor G. C. Shaad spent Wednesday and Thursday of that week at the works of the General Electric Company, at the sub-station of the Schenectady Railway Company and at the works of the American Locomotive Company. On Friday and Saturday the party went to Niagara Falls, where the plants of the Niagara Falls Power Company, the Ontario Power Company, the Niagara Falls Hydraulic Power and Manufacturing Company and the International Paper Company were visited. Arriving in Buffalo on Monday, March 29, the day was spent in the Buffalo sub-station,

the Buffalo Smelting Works and the plant of the Lackawanna Steel Company.

DEPARTMENT OF CHEMISTRY.—Professor W. H. Walker is to give a seminar during the coming term on Chemical Engineering, giving special consideration to the principles on which the more important mechanical operations involved in the chemical manufacturing industries depend, such as drying and filtration by centrifugal force, together with a study of the types of apparatus available for such operations and the kind of work for which each is best adapted. The design and construction of chemical plants are considered with special reference to the chemical resistance of the materials employed.

Dr. W. K. Lewis is to give a seminar on "Problems in Industrial Chemistry, considered from the Point of View of the Phase Rule." The course is intended to show students how theoretical knowledge can be applied to the solution of problems in industrial work, and consists of informal discussions. The seminar is given Wednesday mornings at 8 A.M.

DEPARTMENT OF CIVIL ENGINEERING.—Professor George E. Russell is preparing manuscript for a text-book on Hydraulics to appear some time early in the summer. Its basis is a set of lithograph notes which have been used in Institute courses during the last two years. The purpose of the author is to present to the teaching profession a book primarily written as a text-book, but so filled with reference as to be of value to the practising engineer. The subject-matter includes a discussion of hydrostatics and all the more important parts of hydrodynamics. No attempt will be made to introduce abbreviated, and consequently incomplete, treatment of hydraulic motors and machinery, as the author believes that such matter needs to be handled in a separate volume.

DEPARTMENT OF MECHANIC ARTS.—Summer courses which are given in this department under the auspices of the Institute of Technology were established in 1896. Instruction is offered during the months of June and July in wood-work, forging, chipping and filing, and machine-tool work. The requirements for admission,

and, in general, the work performed, are expected to correspond to those of the regular school year, and similar records and reports are given for the successful completion of each course.

These courses are undertaken primarily for the benefit of two classes of students: first, for those who wish to prolong their stay in summer, in order to distribute their work over a larger portion of the year or to gain more time for advanced work in their regular courses,—time especially valuable in the fourth year, when original investigation and the examination of professional problems form an important part of their occupations; and, second, for those who through illness or for other causes have deficiencies to make up. The continuity of effort and the freedom from interruption due to longer work periods made possible by summer work are of particular value in these laboratory courses.

Department of Mathematics.—Professor Woods has been granted a leave of absence for the school year 1909–10, and will sail for Rotterdam June 5th. He plans to spend some weeks at Göttingen, the remainder of the summer in Switzerland, and most of the coming year in Paris. Professor Bartlett and Dr. Phillips will also spend the summer abroad.

Department of Mining Engineering.—The government of one of the Oriental nations has notified the Institute that it will send two of its prominent professors here in the fall for a course in instruction in mining engineering. They come here because they cannot find elsewhere the kind of instruction they are seeking.

The mining laboratories were recently visited by Professor Carlysle, the new professor of metallurgy in the Royal School of Mines, London. He expects to return to the Institute in the summer to study the details of the work here, preparatory to building new metallurgical laboratories at the Royal School of Mines.

GENERAL INSTITUTE NEWS

Faculty Standing Committees Report on Courses of Study—Professor Lowell's Lectures

The standing committees of the Faculty have presented their annual reports. Among the most interesting of these reports, since it affects so vitally the character of the training afforded by the Institute, is that of the committee on courses of study. This report includes this year an outline of the committee's general policy. The points which the committee consider in dealing with the course schemes are: (1) its general balance in the distribution of time among general scientific and professional subjects, with special emphasis against the over-specialization of subject-matter; (2) the general practicability from the standpoint of time required in exercise and preparation; (3) the subdivision of time. In the latter respect the committee maintains, among other things, that, except in the case of laboratory, drawing-room or field work, time should always be allotted for preparation. The principal matters with which the committee has dealt during the past year have been: (1) an important revision of the course in electrical engineering, diminishing the work in modern languages, introducing applied mechanics in the second year and increasing the elective possibilities of the fourth year; (2) the introduction of a new option,—steam turbine engineering in the fourth year of the mechanical engineering course; and (3) the introduction of required physical training into the first year.

The committee on five-year courses has been occupied with the preparation of this type of course in civil, mechanical, mining, electrical, chemical and sanitary engineering, in chemistry and in naval architecture. Of the schedules prepared, those for civil, mechanical and electrical engineering have been approved by the Faculty and announced in the Institute publications. These five-year courses are designed to meet the needs of three classes of stu-

dents,—those who desire to pursue their studies in two allied branches of engineering; another class, who wish to go more slowly with their work than the present four-year schedule will permit; and a third class, who, in addition to their regular studies, desire to take courses in such general scientific subjects as biology or geology.

The committee on summer courses reported a registration of 269 students as compared with 283 in 1907. The maximum number attending any one course was 48, the minimum 4. Of the total number about 62 per cent. of the students in attendance were anticipating work of the next year, and the remaining 38 per cent. were repeating. About 60 per cent. were taking courses consisting principally of laboratory, drawing-room or field work. About 20 per cent. of the total number in attendance came from other technical schools, colleges or universities.

The report of the committee on tabular view and room scheme shows the difficulty experienced in holding all the classes because of lack of room in the buildings. Approximately 1,000 exercises per week must be provided for, and this is further complicated by the fact that arrangement must be made for bringing together students in different years in the same class. The final arrangement is reached by a number of trials and readjustments.

Thirty-four applications for financial aid were made to the committee on advanced degrees and fellowships by students desiring to pursue graduate work during the year 1908–09. Of these twenty-two were from Institute students, and twelve from graduates of other colleges. The committee recommended twelve grants, fourteen to the former, and eight to the latter class, of the latter three being subsequently declined. Eleven of the twenty-two successful applicants were candidates for the master of science degree, nine were prospective candidates for the degree of Ph.D. and two were taking advanced study without reference to a degree. The committee applied 90 per cent. of its available funds, the remaining 10 per cent. being attributable to the declining of grants by the successful applicants.

The report of the committee on undergraduate scholarships shows an increase of twenty over last year's figures in the number

of students assisted. There are this year 178 students to whom the Institute has made grants. In addition to this the state has aided sixty-eight students, forty of whom were not aided by any Institute grant.

The committee on publication reported the issuing of 11,500 catalogues, 6,500 president's reports, 2,500 bulletins on advanced study and research, 4,000 bulletins on summer courses, 4,000 registers of graduates and 4,000 programmes.

The most important work of the committee on the library during the past year has been the preparation of a subject catalogue for the engineering library, which contains all the books of civil, mechanical and sanitary engineering departments. Provision was also made to publish articles of the character which the *Technology Quarterly* contained before its discontinuance in 1908. The available appropriation for periodicals during the present year was $2,100, which was apportioned in the general manner between the thirteen Institute libraries. These are the general, architectural, biological, chemical, electrical engineering, geological, historical and economic, mathematical, mining, modern language, naval architectural and physics.

Lectures on Cosmic Physics.—Professor Percival Lowell, non-resident Professor of Astronomy at the Institute and director of the Lowell Observatory at Flagstaff, Ariz., gave a course of six lectures on "Cosmic Physics" during the second term. The main purpose of the course was to give a survey of the present knowledge regarding the physics of our solar system, the evolution of the worlds, and to awaken interest and arouse imagination and thought in the large problems which the subject involves. The more important topics considered in these lectures were: 1. The birth of the solar system—dark bodies in space. Collisions with them, past and future. 2. Evidence of the initial catastrophe—single and double star systems. Moments of momentum. Tidal action. Meteorites. The bearing upon this of Mr. Slipher's recent spectrograms. 3. Formation of planets—internal heat generated. How calculated. Its effect upon the planet's career. 4. A planet's subsequent history—astronomy and geology. An explanation of paleozoic times

and of the course afterward pursued. 5. Loss of planet's own heat—received from the sun. How evaluated. Glacial epochs. 6. Death of a world. *a*. Through accident—collision with other celestial bodies. *b*. Through paralysis—turning the same face always to the sun. *c*. Through old age—loss of water and of air.

Fire in Lowell Building.—On January 21 there was a fire discovered in the Lowell Building at about 8.15 in the evening. The fire was confined to the Modern Language Department, which suffered a loss of about two thousand dollars. None of the valuable books in this department were lost. The fire was supposed to have been started by crossed wires.

Resignation of Mr. Porter.—Instructor Charles H. Porter, of the Electrical Engineering Department, has resigned, and will enter the service of William Filene & Sons Company, where he will hold an executive position. Mr. Porter is a graduate of the Institute of the Class of 1903, and was graduated from the Electrical Engineering Department, having previously received from Brown University the degree of A.B. After his graduation he spent a year with the Chase Shawmut Company, after which he came to the M. I. T. as instructor, and has remained here ever since. He is responsible for the present system of problem work in use in the Electrical Engineering Department of the Institute.

Professor Dewey's Appointment.—Governor Draper has appointed Professor Davis R. Dewey a member of the board of trustees of the Massachusetts Agricultural College to succeed the late Carroll D. Wright. Professor Dewey has also recently been made president of the American Economic Society for the ensuing year.

TECH MEN IN THE PUBLIC EYE

WALTER E. SPEAR ('97), has been appointed chief engineer of water supply, gas and electricity in Brooklyn, N.Y. Mr. Spear was recently division engineer of the Board of Water Supply of the city of New York. After graduating in 1897, Mr. Spear became assistant engineer for the Metropolitan Water Works in Massachusetts and also superintended the reconstruction of the municipal filters of the Lawrence Water Works. In 1900 he filled an important position with the New York Board of Water Supply. Three years later, under the auspices of the Burr-Herring-Freeman Commission, Mr. Spear discovered the great resources of underground water within the limits of the Brooklyn watershed. During this work Mr. Spear became thoroughly familiar with the Brooklyn Water Works and the ground water problem on Long Island. Mr. Spear is a member of the American Society of Civil Engineers, the New England Water Works Association and numerous other engineering societies. He is also a corresponding member of several engineering societies in Europe.

LOUIS A. FERGUSON ('88), has the distinction of being the only man who has ever been honored by the presidency of the three great electrical associations in America. He is now president of the American Institute of Electrical Engineers. In 1901 he was elected president of the Association of Edison Illuminating Companies, and in 1902 he was re-elected. In 1902, also, he was elected president of the National Electric Light Association.

LANGDON PEARSE ('01), has been selected by the city of Chicago to make scientific investigation into the methods of sewage disposal with an effort to devise means to reduce the pollution of the waters of Lake Michigan. Mr. Pearse was formerly connected with the Sewage Disposal Bureau of San Francisco.

JOHN M. HOOD, Jr. ('01), engineer of the United Railways and

Electric Company of Baltimore, has been appointed chief engineer of the company.

C. W. RICKER ('91), has been appointed engineering assistant to the receivers of the Municipal Traction Company in Cleveland, Ohio. Mr. Ricker has had a wide professional experience, and has recently been electrical engineer of the Cleveland Construction Company.

G. C. WHIPPLE ('89), has been appointed, by the Common Council of Milwaukee, a member of a committee to devise a suitable plan for the disposal of the sewage of that city. Mr. Whipple is consulting professor of the Brooklyn Polytechnic Institute; a fellow of the Royal Microscopic Society; a member of the American Chemical Society; the Society of Chemical Industry; the American Public Health Association; American Water Works Association; American Society for Municipal Improvements, besides many others. He is the author of "Microscopy of Drinking Water," published in 1905, and "Value of Pure Water," published in 1906.

WILLIAM Z. RIPLEY ('90), of Harvard University, has been elected an honorary fellow of the Royal Anthropological Institute of Great Britain and Ireland, in recognition of his researches in the field of European and American demography.

GEORGE E. HALE ('90), of the Solar Observatory on Mount Wilson, has been appointed a delegate to represent the National Academy of Sciences at the Darwin Celebration at Cambridge.

G. A. ABBOTT ('08), has been appointed professor of physiological chemistry at the State Agricultural College at Fargo, No. Dak., taking the place made vacant by the death of Professor Wood.

FRANK L. PIERCE ('89), of Brooklyn, has been elected president and treasurer of the What Cheer and Hope Mutual Fire Insurance Companies of Providence.

HAROLD K. LOWRY ('04), has been appointed assistant signal engineer of the Chicago, Milwaukee & St. Paul Railway.

H. W. TYLER ('84), was recently made president of the Appalachian Mountain Club of Boston.

Lucius K. Russell ('86), has recently been made professor of chemistry at the Thomas S. Clarkson Memorial School of Technology, Potsdam, N.Y.

J. R. Freeman ('76), and Allen Hazen ('88), were appointed members of a commission of six of the most prominent engineers to accompany President-elect Taft on his trip to the Panama Canal. The Taft engineering party was unanimously in favor of the lock canal. Mr. Freeman states that the foundation of the Gatun dam is as safe as the big dam of the Boston Metropolitan Water Works, and about one hundred and fifty million dollars and five years' time is being saved on the lock canal in addition to the interest of the entire cost of the canal ($350,000,000) for five years. He believes that ships will pass through the lock from one side of the isthmus to the other as quickly as from a sea-level waterway. In the narrowest parts the locks are twice as wide as the proposed sea-level canal would be, and for three-quarters of the length navigation will be conducted through large artificial lakes, allowing vessels to make much greater speed than they could possibly make on a narrow waterway.

Cass Gilbert ('80), C. Grant La Farge ('83), Robert S. Peabody ('68), J. G. Howard ('86), Glenn Brown ('93), John L. Mauran ('89), A. W. Brunner ('79), Daniel C. French ('71), Abram Garfield ('96) and E. H. Blashfield ('69) have been appointed by President Roosevelt on an Arts Council, a national commission to supervise the designing of all federal buildings and their surroundings. The council consists of thirty members, of whom four are painters, four are sculptors and one is a landscape architect, the others being architects. It is interesting to note that, of the thirty men appointed to this very important and representative committee, ten are former students of the Institute, all of them architects except two, one a painter and one a sculptor.

Robert S. Peabody ('68), George R. Wadsworth ('98), Arthur A. Shurtleff ('94), Richard A. Hale ('77) and Desmond FitzGerald, of the Institute Corporation, have recently made a report to the Metropolitan Improvement Commission on some

phases of the commercial and civic development of Boston,—a report on which they have been engaged as engineers for several months. The features principally touched on are the development of the harbor, including a free port, dry docks and ample warehouses, the improvement of freight and passenger traffic and designs for a civic centre adapted to several possible sites. This report has attracted wide-spread attention, and will be of great benefit at this time when the general development of Boston is receiving so much careful study.

ALLSTON SARGENT ('98) is chairman of the joint committee of the College Clubs Building Company. This is the organization which was formed to finance the proposed club-house in New York for alumni of Amherst, Brown, Dartmouth, Technology, Wesleyan and Williams.

WILLIAM G. SNOW ('88) has been elected president of the American Society of Heating and Ventilating Engineers.

A Directory of Every Former Student

Work on the new Register of Former Students is being pushed forward rapidly, and it is now expected that a copy will be mailed to every Tech man for whom we have a good address, during the present month. This register, which is published as a bulletin of the Institute, is somewhat larger than the catalogue, and this year will take the place of the Register of Graduates. The names are arranged both alphabetically and geographically. The alphabetical list contains the names and addresses of all former students, giving the business in which they are engaged.

Since the January REVIEW was published, over 700 associate members have joined the Alumni Association, and new names are coming in every day.

MISCELLANEOUS CLIPPINGS

When interviewed yesterday as to the transfer to Harvard from the Institute of Technology of two of the latter's leading professors, George F. Swain, head of the Civil Engineering Department, and Harry E. Clifford of the Electrical Engineering Department, Acting President Arthur A. Noyes said:—

"In justice to these two professors and to the two institutions it should be understood that neither of these two men has made the change because of the offer of a higher salary. It is rather because they feel that to them as individuals there is offered a greater opportunity for service in connection with the development of the new school.

"The past history of the Institute has shown that even its best professors are seldom lured away merely by financial inducements. Nor is it likely that the income of the much-talked-of McKay millions will be more attractive than similar inducements elsewhere. With few exceptions members of the Institute's Faculty do not believe that the form of engineering education represented by the imperfectly co-ordinated undergraduate and graduate courses of the university has as much future promise of success and effectiveness as the Institute's system."

As to the possibility of the question of the Technology-Harvard merger being again brought up, now that a member of the Institute Corporation and two of its professors have been taken up by the university, Dr. Noyes said there was nothing in the statement. He said that even those members of the Faculty and Corporation who had been the strongest advocates of the merger admitted that it was not possible, and that Professor Lowell himself feels that the question has been settled never to be taken up again.—*Boston Globe, January* 23.

Dr. Maclaurin, whose accession to active leadership at "Tech" has been overshadowed somewhat, unfortunately, in popular interest by recent changes at Harvard, finds himself at the start of his administration burdened with grave financial problems.

Changes in site and buildings cannot be avoided much longer, except by the alternative of keeping down the number of students. Already the requirements for admission are so high that few young men approach them

save with apprehension. The proposition to increase their severity is based, not on the idea that "Tech's" examinations are too easy, but on the necessity of keeping the number of successful applicants for enrolment within the limits of the Institute's facilities.

Unfortunately, "Tech" has no great body of wealthy graduates to whom she can appeal for endowments. The necessity of working for a living is one of the chief incentives that send young students to face the stiff examinations and strict discipline. And, while after-life holds many rich prizes, there are few, if any, Higginsons and Goulds and Vanderbilts on the alumni's roll.

It seems to be up to the Commonwealth itself to help Dr. Maclaurin out of his dilemma. It must never be said that any young son of Massachusetts, eager and able to meet adequate scholarship requirements, has to be "frozen out" by an adjustment of artificial standards necessitated by financial distress of the great Institute of which our state is so justly proud.—*Boston Post.*

President Maclaurin of the Institute of Technology comes to his new task without any of the strength or the weakness of long-established personal and social relations in Boston. Not an alumnus of the institution, not handicapped by any obligations incurred to any men or any families, he can view the problem objectively, as it were, and act with institutional ends only in view. On the other hand, of course, he has a deal to learn, much which a Bostonian or even a New Englander from any other state would know, and his thought and strength, to a considerable extent, will be spent in acquiring that which will come as instinctively to Harvard's new president as the salutations of the day. On the other hand, President Lowell, when he takes up the reins, will be the conscious, or unconscious, representative of traditions, points of view, ways of looking at things, which cannot but influence him in his executive decisions and which will prevent him from taking that objective point of view which President Maclaurin can take for lack of family, institutional and sectional deflections. It will be interesting to watch the outcome of the two presidencies, for this if for no other reason.—*Boston Herald, January* 18.

The plans for the Harvard Graduate School of Applied Science are being pushed forward rapidly in anticipation of the receipt next fall of the first $1,000,000 instalment from the McKay bequest for this purpose. Under the terms of the McKay will, the income of the property was to accumulate

until it amounted to $1,000,000, when it was to be turned over to Harvard University for a school of applied science. Thereafter four-fifths of the income of the estate will be turned over to the university for the same purpose, and at the expiration of certain life interests the whole great estate reverts to the university, thus making its technical school the wealthiest in the country.

The history of instruction in applied science at Harvard has been unusual. Special attention was only given to such branches of applied science as were provided for by specific bequests, like mining, metallurgy and architecture, for it was the policy of the university to avoid covering the same field as the Massachusetts Institute of Technology. It was also felt by a section of the Harvard authorities that, while other universities might find it desirable to maintain large undergraduate engineering colleges, more good would be accomplished in the end for sound education principles as a whole, and the engineering profession in particular, if its instruction in engineering were put on the same level as that in law, medicine and theology. In other words, it was held that the Harvard School of Applied Science should be open only to those who had completed a college undergraduate course.

When the McKay millions were left to Harvard University for a technical college, it was at once apparent that a conflict of interests between the university and the Massachusetts Institute of Technology was imminent. After a careful study of the terms of the bequest it was decided that this great educational fund could be made available for both the university and the Institute by merging the latter with the former, making it a distinct undergraduate school, and leaving the university to carry on post-graduate work. The Institute was then cramped for funds and space, while the university could help it in both these respects. This merging of interests was urged by President Pritchett, of the Institute, President Eliot, of Harvard, and his successor, President Lowell, who was then a member of the Executive Committee of the Institute, which his family had materially helped in its early days. The Faculty and alumni of the Institute were strongly against the merger, however, and it was accordingly abandoned.

Since then the Harvard authorities have given very careful attention to the projected school of applied science, and announced last spring that they would not give undergraduate instruction, thus making Harvard the first university to demand for engineering the same standard of education which the great universities have all along required for the older learned professions. This decision removed the possibility of any direct competition between Harvard and the Massachusetts Institute. The high standard

for admission to the Harvard School of Applied Science will operate to keep the number of students down, at least for some years, and probably other differences between the two schemes of education will develop. It is safe to say, in view of the action of the Harvard authorities for many years, that they will avoid, so far as practicable under the terms of the McKay bequest, any direct competition with the Massachusetts Institute. It is equally certain that Harvard will ultimately have a very fine engineering school with a very high standard.—*Engineering Record, January 30.*

In the last issue of the *Engineering Record* a reference was made to the five years' course of engineering study now offered at the Massachusetts Institute of Technology, with the observation that this important feature of the Institute's work "marks an innovation which deserves thoughtful consideration." In fact, it is such an important step in engineering education that it deserves far more attention than it will probably receive, at least, on the part of the profession in general. The Massachusetts Institute is to be congratulated upon taking a step of such moment in the interests of the education of engineers, indicating the alertness of that prominent technical institution in meeting the broadest needs of engineers in their educational training. . . . All the prominent technical schools have felt this pressure constantly increasing in intensity for a number of years. This is a natural and necessary development. The engineer is no longer a merely technical man. His professional work has become affiliated with many lines of business activity, and he is naturally drawn into many positions where general administrative qualities are required. This necessitates general educational training, as has been already recognized in the professional schools for lawyers particularly. It is a phase of engineering education to which schools of engineering must give their most serious attention, for it corresponds to a rapidly widening demand upon engineers. On the other hand, another educational question has arisen, whether shortened courses of even less than four years in length may not wisely be formulated for certain engineering specialties which young men may desire to follow who never expect to be full-fledged engineers. Such courses of study are already given in some evening courses in large cities, but it is a serious question whether engineering schools of the present day as a whole should not provide this special development of educational training.—*Engineering Record, October 17.*

When President Maclaurin, newly elected head of the Massachusetts Institute of Technology, and the new president of Harvard University,

soon to be named, take up their respective tasks, they will find some that are common to each, and some that are peculiar and distinct, conditioned by the type of the institution, by its history, its environment and its resources. In the report just rendered on the affairs of the Institute of Technology, Acting President Noyes has outlined some of the pressing needs of that institution, as did President Eliot those of Harvard at a recent gathering in Providence. Conspicuous among the needs of the Boston institution is a new site and plant. At Cambridge the serious matter is to retain the old relative rank in student enrolment, owing to altered conditions, economic, social and religious, which affect former sources of supply.

There is one large problem, however, which each institution must face, and which both can settle best by co-operation rather than by separation; and it is one of the most important for education in New England. The logic of the matter, and the practical results of the effective competition of state-supported institutions of higher learning in the West, are combining to create a demand in New England for something of the same kind.

A demand for a State University in Massachusetts need never come, providing her present educational institutions work out a scheme satisfactory on two points, namely: tuition at nominal rates, which obtain in state universities, and service of the state in the same practical, efficient way in which some of the Western universities are bringing knowledge and scientific methods to bear on the life of the common people. Carefully and thoroughly worked out, and made inclusive of the best institutions of the state, a compact of this sort between Harvard and the Institute of Technology and other institutions, might permanently fend off a popular demand for something new, distinct and definitely controlled and supported by the state.

Nothing is more significant than the demand going up from the people everywhere for access to the best that education can give. Ancient Oxford and Cambridge are alive to the fact that they must get nearer the people, for the people are bound to get nearer them. London recently saw three hundred delegates from trades-unions in session, to "consider the relation between the older universities and labor, with especial reference to the forthcoming report of the joint committee of university and labor representatives on Oxford and the education of the people." This committee is soon to report a definite scheme of working-class education, by which Oxford may be brought back to the people, and representatives of the people brought up to and into Oxford. The dream of F. D. Maurice and his group of

fellow Broad Churchmen and Christian Socialists years ago, is soon to come true.

In the higher institutions of learning of Massachusetts and New England the doors have always been open to welcome deserving and industrious youth of any creed, race or station; but New England universities and colleges have a lesson to learn from some western state universities,—how to formally and effectively serve society through the extension of instruction far beyond academic walls, and through the direct influence of educated experts upon civic problems as they arise.—*Boston Herald, December* 15.

. . . The characteristics of the Institute, perhaps insufficiently displayed by this sketch, are the following: (1) the importance attached to the fundamental principles rather than to the details of a trade; (2) the encouragement of social life among the students, a recent development due largely to the spirit of the previous President; (3) the encouragement of investigations made by the students, in whom is instilled much independence of thought and action; (4) the combining of professional with liberal studies. A liberal view is held as to the object of the studies, and serious effort is made to co-ordinate science and culture. The object of those who shaped the spirit of the institution was not to make solely engineers, but men of liberal spirit and large ideas.

After studying such an institution, one may doubt the wisdom of the usual method, which is this: to separate or to try to separate culture from science and technology study. It is usual to devote the first part of the student's life to culture, and to postpone his technical and scientific education. This artificial arrangement is completely irrational; for, if there is really ground for making any separation, it would seem more reasonable first to train the young mind completely by inculcating scientific methods, and to leave its general culture to completion in a later period, when it will have a widened horizon and better knowledge of men and affairs. However this may be, there can be no doubt that an education received at the Massachusetts Institute of Technology may be of the largest service to any one whose has the least aptitude for science. Even for a man who might aim at a purely scientific career, it would be well to go through such a school: he would escape the danger of too sharp a separation between head and hand, which is so unfortunate for both. Science is too much inclined to concern itself with abstractions and unreal problems. Its detachment from practice deprives it of its most necessary stimulus, and that to the

harm of science or of industry. A good technological institution reminds us only that we need not to develop able men of science and of industry, but that we must develop science and industry together, and by these raise humanity to its highest possible level.—*Richard C. Maclaurin, in the "Revue Scientifique" (Paris).*

The reports of Acting President Arthur A. Noyes and the other officers of the Massachusetts Institute of Technology are given in the Bulletin of the Institute for January. The Acting President says: "Without sacrificing its national scope or its own independence, the Institute should, therefore, constantly strive to serve the state in every possible way,—in the development of its natural resources, in the improvement of its industrial processes and its transportation facilities, and especially in the solution of its educational problems. In all these respects it should stand to the Commonwealth much in the same relation as do the progressive state universities of the middle west. In order that the Institute may render, in larger measure, this public service, the state should supply the necessary resources. The forms which it would seem such assistance would most naturally take are: first, provision for a reduced tuition to Massachusetts students or increased scholarship funds for their benefit, such as will place the educational opportunities which the Institute affords within the means of a larger proportion of the well-prepared graduates of the high schools of the state; second, provision for the execution in its laboratories of investigations in engineering and applied science which are of especial importance to the development of the state's resources and industries; and, third, cooperation with the Institute in providing for workmen a sound education in the industrial sciences, by means of evening courses carried on in its class-rooms, drawing-rooms and laboratories by members of its instructing staff."—*Springfield Republican.*

BOOK REVIEWS

LEAD AND ZINC IN THE UNITED STATES. Comprising an Economic History of the Mining and Smelting of the Metals, and the Conditions which have affected the Development of the Industries. By Walter Renton Ingalls ('86). pp. x + 368. Illustrated. New York: Hill Publishing Company, 1908. $4.

Most publications dealing with the histories of metals have mainly an antiquarian interest. The two leading exceptions to this general rule are found in the great work of Beck on iron, and the more general book of Neumann on the leading industrial metals, as both authors have taken up the statistical, industrial and technical sides, and added them to the usual chronological treatment of the subject.

The present work deals with lead and zinc only, the ores of which frequently occur together and therefore influence each other in treatment. The new departure of this publication lies in the fact that, restricting the field to the United States, it considers the American methods of treatment of the metals from the mine through the smelter to the market of the finished product. The technical processes are given with sufficient details to be clear even to the reader not especially versed in this branch of engineering.

The time of writing such a work is opportune, as some of the founders of the modern American lead-smelting practice are still actively engaged in their profession, and as the fathers of the first industrial production of zinc are still living; nor could the work have fallen into better hands than those of the author, who is well known to the mining and metallurgical profession as an engineer, as a writer on subjects relating to lead and zinc, and as the editor of one of our leading technical journals and annuals.

The introduction gives a brief and concise review of the history of the two metals in this country. The first part, which deals with lead, is much longer than the second, devoted to zinc. This was to have been expected, as, while lead was first mined in the early part of the seventeenth century, zinc was not produced until two centuries later.

The history of lead begins with an account of the occurrence of lead ores. The discussion outlines the leading geological features of the deposits, but dwells more upon the character and grade of the ores, and upon the industrial conditions which governed the mining operations. This is followed by the chronology of the history of lead-mining, which starts from the first record of 1621, when lead was mined and smelted near Falling Creek, Va.,

and records the leading events down to 1906. Chapter III. gives a valuable résumé of the development of the blast-furnace practice of smelting silver-bearing lead ores, and of the treatment of silver-free lead ores in the ore-hearth and the reverberatory furnace. It shows how blast-furnace smelting developed from crude beginnings into its present unsurpassed excellence by the application of science to art, and by concentration of operations into large, centrally located plants. In the account of the ore-hearth work the increase in yield by the recovery of fumes receives due consideration. While in smelting the work of Arents, Eilers, Hahn, Raht and others is recorded, in the chapter on refining we should have liked to see mentioned the invention of the Steitz siphon, which changed the refining practice as did the Arents siphon tap the blast-furnace work, and the systematization of the complications in the Parkes process, which is more largely due to E. F. Eurich than to anybody else, and which forms the basis of the modern American practice. We miss also any record of some early eastern refineries, as, *e.g.*, the Delaware Lead Works at Philadelphia and other smaller plants around New York. Chapters V.–XII. give a detailed history of the mining and metallurgical operations of the several states and territories. The production of metal at different periods is usually given, although in some cases, *e.g.*, in Montana, the data are missing. The remaining 55 pages of the 255 given to lead deal with the statistics of production, consumption and prices, with the commercial conditions, the tariff on lead, the labor conditions and with trade agreements and combinations.

The second part, which takes up 90 pages, treats of the history of zinc according to the same general plan as followed with lead. The mechanical concentration of zinc ores, which plays such an important part in the treatment, receives a separate chapter. The chapter on the metallurgy of zinc, the author's specialty, contains a critical review of the different types of distilling furnaces which have been and are used in this country. It is a chapter which every metallurgist will study with profit and pleasure.

The book, as a whole, is most satisfactory, as it is replete with valuable information presented in an interesting way. Last, but not least, it has a full index which enables the student to look up points upon which he desires enlightenment.—*H. O. Hofman, in Science.*

PRINCIPLES AND PRACTICE OF SURVEYING. By Breed and Hosmer. Vol. II. Higher Surveying. Wiley, 1908.

The second part of the book on surveying, by Messrs. Breed and Hosmer,

which deals principally with topographical surveying and the elementary problems of triangulation, is a fitting supplement to their first book on surveying for engineers. All the geodetic and astronomical problems are such as can be solved with the ordinary engineer's transit, and the methods of observation and computation are stated in such simple language that they can be easily understood by any one who has studied plane and spherical trigonometry. The chapter on topographical sketching and the relation of topography to geology is especially interesting, and the illustrations admirably re-enforce the text. The chapter on hydraulic surveying, by Mr. H. K. Barrows, shows every indication of having been written by one who has had much practical experience. The trouble with many of our text-books on advanced surveying, geodesy and topography is that they give much more attention to those subjects than is desirable for the general civil engineering student. This text-book of Messrs. Breed and Hosmer embodies, to my mind, the exact amount of advanced work in surveying which is suitable for a student who is to become a general practising engineer. ALFRED E. BURTON.

MARS AS THE ABODE OF LIFE. By Percival Lowell, A.B., LL.D., author of "Mars and its Canals," director of the observatory at Flagstaff, Ariz.; non-resident professor of astronomy at the Massachusetts Institute of Technology; Fellow of the American Academy of Arts and Sciences. Illustrated. New York: The Macmillan Company; Washington: Brentano's.

The text included in this volume comprises the matter of a series of lectures delivered in 1906 before the Lowell Institute. The course attracted such a wide-spread attention that the lecture halls were filled to overflowing and it was necessary to repeat the addresses. The lectures were then published in the *Century Magazine*, and are now issued in book form. This successive treatment of Professor Lowell's explanations as to the latest discoveries regarding the conditions of the planet Mars is justified by the fact that the author is, doubtless, at this time the foremost among those who are engaged in the fascinating study of Mars. Professor Lowell, however, did not deal exclusively with that planet, but pitched his lectures in the key of planetary evolution in general, and the book is a presentation of a thesis which Professor Lowell long had in mind, and of which the studies of Mars formed only a part,—the research into the genesis and development of what is commonly called a world. He views Mars in this light, studying how it originated and how it came to differ from the earth in the process. In the

first part of this volume the broader aspects of the question are dealt with at length under the general title "The Genesis of a World." In the second chapter the author treats of the evolution of life, which he regards as an inevitable phase of planetary evolution. The relation of the sun to the planets and particularly to conditions on Mars calls for a third chapter. Perhaps the most popular interest centres in the chapter which deals with Mars and the future of the earth, it being the author's thought that possibly by a study of the planet a concept of what is in store for this sphere may be obtained. As to the canals of Mars, Professor Lowell holds to the theory that they are neither rivers nor cracks, but have been produced by artificial means. He is firmly convinced of the existence of life upon Mars, but he believes it is nearing its end. The book is of a highly scientific nature, but it nevertheless appeals to the non-technical reader, and is decidedly of an instructive character, tending to correct misapprehensions regarding the present state of Martian study.

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NEWS FROM THE CLASSES

1868.

ROBERT H. RICHARDS, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The secretary has received a number of interesting letters from classmates, some of whom have not been heard from for a long time. One most interesting is from Ernest Bowditch, as follows:—

The statement that any part of my vacation in 1908 was occupied in seriously studying oyster culture and planting oysters at Isle au Haut, Me., may probably be received with amusement, but that is the truth. It may not be obvious, either, that the technical training of an engineer fits one peculiarly to carry on experiments in pisciculture.

It may not be generally known that, formerly, extensive beds of oysters flourished along the coast of Maine, Bay of Fundy and the south shores of New Brunswick and Nova Scotia; but now, with two or three exceptions, the localities where oysters thrive in northern waters, east of Boston and south of Labrador, appear to be confined to areas along the north shores of Nova Scotia and New Brunswick and about Prince Edward Island.

No plausible theory has been formulated explaining why the beds in Maine have died, though it is surmised that perhaps the temperature of the water may now be lower than formerly, owing perhaps to some temporary or permanent deviation of the Gulf Stream, and that oysters of that type under the new conditions can no longer flourish where they were once sufficiently vigorous to produce shells sometimes as much as nineteen inches in length.

The two native beds still alive in Maine are what are referred to, somewhat contemptuously, as "river" oysters, and are located in brackish water between the Kennebec and the Penobscot. The shell-fish received from there at Isle au Haut, for experimental purposes, were fairly large in size,—in fact, too large for the best seed oysters,—but were thin and in poor condition, due, perhaps, to unfortunate surroundings where they grew. Particles of soft coal, ashes and bits of refuse from a leatheroid factory were reported as being noticed on some shells, both of which would tend to discourage the health of fish supposed to grow best in clean, cool water.

These "river" oysters were obtained to use as a basis of experiment, because they were evidently descendants of the original bivalve settlers, and therefore acclimated; and with them were mixed an equal quantity

of shell-fish from the south shore of Prince Edward Island, as being probably more likely to do well than if brought from the warmer waters of the south.

It is intended, however, to add oysters from Providence River, Long Island Sound and Norfolk during this year, in the hope that in this way a hybrid may develop that will not only stand the cold water, but multiply as well.

Judging from appearances and shape, the Prince Edward Island oysters are not the same type as those formerly growing in state of Maine waters. Though smaller, they appear to be very healthy and fat, and were received in prime condition.

Three years will be needed to try the experiment. Meanwhile it is intended to add to the collection at every opportunity, keep a record of the summer temperature of the water, and, as far as possible, eliminate star fish, mussels, etc., that are the natural enemies of the oyster.

A bed has been successfully started in this way in Casco Bay, though perhaps it is early yet to accurately gauge its measure of success. There would appear, however, to be no basic reason why, if oysters can be made to grow successfully at Portland and breed naturally along the north shore of New Brunswick, they cannot be made to grow between the two places. It has been stated that the summer temperature of the water where the writer is operating is too cold for the successful breeding of the oyster, though they probably may be made to grow there. Time will show whether this be true.

In any case, whether the experiment is successful or not, it is interesting to try, and, should it succeed, there would open an opportunity for the fishermen that might prove quite as remunerative to them as lobster fishing, without many of its hardships.

—Jackson intended to be at the annual alumni dinner, but was unable to attend. He reports that he is getting out a report on the Cambridge bridge, which has been a most interesting work, and has in contemplation a more technical description of the bridge, which will be presented to the American Society of Civil Engineers.—Whitney Conant, who is treasurer of the Jersey City Water Supply Company, Paterson, N.J., writes that he is to take a short trip abroad this summer with Mrs. Conant. He says, "Weight of years certainly rests very much lighter than I would have believed it possible in '68, and I am not offended when those who know me best tell me I am still a 'kid.'"—Bryant writes from Jamestown, No. Dak., that he is still very actively engaged in railroad engineering work, being out in the open much of the time. Sometimes he has to face blizzards in camp out there in the north-west with only an oil stove for comfort. Often, however, he can arrange to do his winter work in the south.—Eli Forbes has been leading an out-door life so far as possible since he retired from business. He

is now at Lancaster, Mass. He writes that he is living a very quiet life, and at the same time tells us of a saddle trip of two hundred miles that he took last October through the state of Maine.—Howard Carson ('69), has been engaged mainly as chief engineer on the Boston Transit Commission in completing the Washington Street tunnel, making studies for the Beacon Hill tunnel and the Riverbank subway, etc. He is one of the advisory board of engineers for the double track railway tunnel now partially completed under the Detroit River for the New York Central lines.—Appleton writes from East Pepperell, Mass., that he is now spending much of the autumn and winter at his summer place at Pepperell, which contains about thirty acres in the highest part of the town, five hundred feet above the sea. The view from this point is very impressive, extending to the Uncanoonac Mountains in New Hampshire, about twenty-seven miles away.—Channing Whitaker submitted to an operation about two years ago, and for a time was forced to put in short hours at the Lowell Machine Shops with which he is connected. Recently, however, he writes that he is steadily gaining in vigor, and hopes soon to be himself again.—At the alumni dinner in January five of us, Tolman, Stevens, Fillebrown, Forbes and Richards, had a jolly time together, enjoying the lively doings and talking over old times.

1875.

E. A. W. HAMMATT, *Sec.*, Hyde Park, Mass.

The annual meeting and dinner of the class was held at Young's Hotel, Boston, on Friday, March 5, 1909. The secretary (who has been in Brattleboro, Vt., for several months) had arrived somewhat early in order to prepare his report, and the first member to greet him was Tom Bakewell. This was the first meeting Bakewell has attended since 1875, and he was somewhat at a loss when it came to recognizing the boys. At about 8 P.M. the following members sat down to dinner: Aspinwall, Bakewell, Beal, Bowers, Dorr, Hammatt, Hibbard, Howe, Kinnicutt, Lewis, Mixter, Plimpton, Simonds and Willard. At 9.50 President Hibbard called the meeting to order, and the secretary read the report of the last meeting, which was approved. The report of the executive committee having been accepted, that of the treasurer was presented. It was accepted and ordered placed on file. On motion the secretary cast a ballot for officers for the coming year, and the following were declared elected: president, Thomas Hibbard; vice-president, B. L. Beal; secre-

tary and treasurer, E. A. W. Hammatt; executive committee, B. L. Beal, S. J. Mixter, W. P. Willard. On motion of Mr. Kinnicutt, it was voted that Messrs. Hibbard, Mixter and Beal constitute a committee with full powers to take charge of class matters connected with the M. I. T. reunion to be held in June next. Adjourned at 11 P.M.

1877.

RICHARD A. HALE, *Sec.*, Lawrence, Mass.

The annual meeting and reunion of the Class of '77 was held March 3 at the Technology Club at 7 P.M. President Carter being in San Francisco, vice-president Lawton presided. Ten members were present: C. F. Lawton, H. S. Southworth, Walter Jenney, B. C. Mudge, Charles H. Norton, A. L. Plimpton, George Baldwin, E. H. Gowing, Ed. W. Davis and R. A. Hale. Mr. Baldwin's arrival from Savannah was quite unexpected, and many interesting incidents of southern experiences were related. A committee, consisting of Joseph P. Gray, A. L. Plimpton, E. H. Gowing and R. A. Hale, was appointed to arrange for the June reunion. The former board of officers was re-elected, consisting of H. H. Carter, president; C. F. Lawton, vice-president; and R. A. Hale, secretary and treasurer. The death of Allan Knowles, of Yarmouthport, a former member of the class, was announced. General reminiscences were exchanged with no formal remarks. Letters were received from George W. Kittredge, who is about taking a trip to California, and E. G. Taber, who is assistant engineer of the Spokane Railway Company, Spokane, Wash. The meeting adjourned until the June reunion. Hon. Wallace Hackett ('77), represents Portsmouth in the New Hampshire legislature. He served as mayor of Portsmouth during the last two years.

1878.

LINWOOD O. TOWNE, *Sec.*, Haverhill, Mass.

Late fall, winter and spring styles in President of these United States and Governor of Massachusetts have, by vote of the people, evidenced a decided partiality for the classes of '78. Ours of M. I. T. has accordingly, contrary to its usual modesty, been forced to step to the front and put forth our man Draper. The entrance examinations, so to speak, were passed during Governor Guild's term, with Draper as acting governor much of the past year. His entire

fitness for admission being thus shown, he has been duly assigned a desk under the gilded dome, and we of his scholastic family feel duly proud thereat. This, it is hardly necessary to state to other classes, was all arranged, preliminarily thirty and more years ago, so undergrads would best take notice if they want to be properly placed later on. The stars, fate, fitness and his known spirit of hospitality accordingly led his Excellency to arrange for the thirtieth anniversary dinner at his Beacon Street home on the evening of January 16. Here gathered twenty-one fellows, about half the original entering class, and practically comprising all the men, with two or three exceptions, located east of the Mississippi. Mrs. Draper and the Governor received the guests on arrival, after which adjournment was made to the dining-room. As has always been our custom, informality prevailed. Rackemann did make appropriate remarks on the toast to his Excellency. President Baker, on behalf of the guests at table, presented him with the Massachusetts State flag, or, rather, inquired if he could, without disturbing the etiquette of office, accept the same. Draper made answer in a manner to give him a passing mark and get the flag, which has since been completed, Baker taking it to the State House. Dinner over, adjournment was made to the library and a cheerful log blaze, around which talk of old and new days made midnight come all too soon. We are inclined to think that the classes of '78 are, after thirty years, the ones having those "best of days" the present Tech youngsters are singing about, and this in a way and with a heart-to-heartiness that can hardly be known by these youngsters till they have had the same length of time to become seasoned, to summer and winter each other, as our little group has done in all the years. One of the pleasant incidents of the evening was the first wearing before us by Baker of his recently received decoration from the Mikado of Japan of the "Order of the Rising Sun." This order was established about 1860, and has been conferred on only thirty-eight individuals. Baker modestly confesses to mild courtesies rendered Baron Kaneko and other Japanese representatives coming to this country. To hear him tell it, one would think he'd done little but feed them (a pleasant way of his, as we of the class well know), but we opine that deep in the hearts of the diplomats from the Flowery Kingdom there's something more,—at least they evidently so persuaded the Mikado. At any rate, the decoration is a handsome thing in itself, now worn by an all-round similar man. Besides the host and President Baker, those at table were: Allbright, Bradford, Brigham, Chappell, Collier, Edwards, Higgins, Miller, Nichols, Rackemann, Reed, Rich, Robertson, Sargent, Sawin,

Schwamb, Williams, Woolworth and Towne. Rollins was missed at the dinner,—his first absence in years. Mrs. Rollins and he have been wintering abroad, especially in Egypt. Having successfully dammed the Charles, he has certainly earned a run and a rest across the bigger water.

1879.

E. C. MILLER, *Sec.*, Wakefield, Mass.

The annual meeting of the Class of '79, M. I. T., was held at Reisenweber's, 58th Street and 8th Avenue, New York city, Dec. 28, 1908. There were present William J. Haskins and Mrs. Haskins, Horace J. Howe, S.B., Daniel C. Hemingway, Frederic H. Lane, S.B., and Mrs. Lane, Walter Large, William W. Macfarlane, S.B., Arthur M. Waitt, S.B. At the business meeting twenty-five ballots were cast and polled by Messrs. Howe and Haskins, who reported the following officers elected: president, Frederic H. Lane, New York city; vice-president, Professor R. W. Lodge, Boston, Mass.; secretary, E. C. Miller, Wakefield, Mass.; business committee, Allen M. Jenks, New York city, and Louis P. Howe, Marlboro, Mass. In the absence of the secretary, Mr. E. C. Miller, whose business engagements prevented his attendance, the minutes of the last meeting were read by Mr. A. M. Waitt and approved. Letters of regret were read from Vibe C. Spicer, Edwin C. Miller, William S. Stearns, Charles S. Gooding and R. M. Hosea, and notices that they were alive, but unable to attend, from F. B. Knapp, J. W. Cabot, Wilson Eyre, H. G. Hall, G. W. Fabens, F. S. Coffin, C. A. Washburn, F. G. Stantial, Professor R. W. Lodge, Louis P. Howe, George F. Blake, William S. Hazeltine, E. A. Cutter, William H. Rea, Professor W. H. Pickering and George F. Riggs. Also notices of non-ability to attend were received from two members who were too modest to sign their names, and deserve the obscurity that shall be theirs. The members of '79 are saddened to learn of the death of their well-beloved member, Mr. Frank E. Alden, who died at Edgartown, Mass., Sept. 16, 1908, rounding out in his prime a particularly useful as well as successful career. Resolutions of respect and sympathy for his family were adopted. The banquet began promptly at 7.30, and good fellowship, reminiscences of the past thirty years, songs and stories, made the time pass quickly till nearly midnight. The presence of the ladies was an innovation heartily welcomed, especially since the attendance was small, and their graciousness was fully equal to the occasion.

1881.

FRANK E. CAME, *Sec.*, 512 Guy Street, Montreal, P.Q.

Mr. George A. Mower, of the Class of '81, presided at the annual American Club banquet in London last year.—Mr. Harry H. Cutler has retired from business, and has been spending the winter at Pinehurst, N.C., where he had a cottage. He spends his summers mainly in autoing.

1882.

WALTER B. SNOW, *Sec.*, 170 Summer Street, Boston, Mass.

Edgar B. Thompson has been appointed superintendent of motive power and machinery of the Chicago, St. Paul, Minneapolis & Omaha Railway. Since he left the Institute, the story of his progress is as follows: He began railway work on May 18, 1882, with the Chicago & North-western at Chicago. On Feb. 26, 1885, he was made chief draughtsman, and on Feb. 2, 1895, was appointed mechanical engineer. On March 12, 1897, he was appointed mechanical engineer of the Northern Pacific. From March to August, 1899, he had charge of some special work in the car department of the Chicago & North-western. On Aug. 5, 1899, he again assumed the duties of mechanical engineer of the Chicago & North-western, and on Jan. 1, 1903, he was made master mechanic at Mason City, Ia. On June 1, 1903, he was appointed master mechanic at Winona, Minn., and on July 1, 1906, was made assistant superintendent of motive power and machinery, which position he held until his recent appointment.—Miss Clara Preston Ames announces that she will conduct a small party on a three months' trip to Europe, sailing from New York, June 26. The itinerary includes visits to the finest cathedrals of England, France and Germany, the university town of Oxford, the castles of Windsor, Warwick and Heidelberg, the wild and picturesque scenery of North Wales, the quaint scenes of Dutch villages, the interesting mediæval architecture of Hildesheim and Nuremberg and some of the grandest parts of Switzerland. Special attention is given to the art treasures in the large cities. Ten days each are given to London and Paris and five days to Berlin.—John F. Low's permanent residence and official address is now Duxbury, Mass.—George W. Mansfield is interested in the Ninigret Mills Company, Mystic, Conn., of which company he is treasurer.—James P. Munroe, as a representative of the Institute, addressed the alumni of Johns Hopkins University at their

annual dinner in Baltimore on February 22. On February 14 he spoke on Abraham Lincoln at the one hundredth commemorative services at the Boston Young Men's Christian Union and on Savings Bank Insurance and Old Age Pensions at Wellesley College on March 5. The *Popular Science Monthly*, March, 1909, contains an article by Munroe, entitled "The American Public School."

1884.

PROF. H. W. TYLER, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The annual dinner was held at the Technology Club, February 19 with the following ten members present: Gill, Hammett, Doane, French, Dearborn, Puffer, Appleton, Bardwell, Coburn, Tyler. Interesting letters were received from several of the absentees, and announcements were made by the committee on the twenty-fifth anniversary book. The class expects to have a large gathering at the June reunion, and another dinner of local members in the meantime. The publication of the book will follow as soon as possible after the Reunion in June, and will include an account of the latter.—Puffer declined to continue service as secretary, and Tyler was elected.—Luther is believed to be the first member of the class to have a son in the instructing staff.—'84 has now three members on the Corporation: Rotch, duPont and T. W. Robinson, besides at least a half interest in Newell, whose term has just expired.

1885.

ISAAC W. LITCHFIELD, *Sec.*, 88 Broad Street, Boston, Mass.

At the alumni dinner in January '85 had a larger quota of men present than any of the classes at the neighboring tables. Those present were: Hayes, Eaton, Brown, Talbot, Merrill, Dewson, Bartlett, Jim Kimball, Morss, Little, Richards, Pierce and Litchfield. The dinner was a lively one throughout, and '85 did not lose any tricks. The annual dinner will be held at the University Club, Saturday evening, April 10, at seven o'clock. The reception committee will be on hand about six o'clock as usual. At this dinner, arrangements will be made for the reunion in June and for our twenty-fifth anniversary, which comes next year. The election of C. R. Richards as a term member of the Corporation is a source of great satisfaction to '85. We now have two classmates on the Corporation, Morss and Richards, and one, Fred Newell, has just retired, his

term of office having expired.—At the meeting of the American Association for the Advancement of Science, which was held in Baltimore last December, two '85 men, chairmen of divisions, presented papers. An address on "Science Teaching as a Career" was presented by Henry Talbot as a retiring chairman of Section C, and the other, on "The Untilled Field of Chemistry," was presented by Arthur D. Little, chairman of division of industrial chemists and industrial engineers of the American Chemical Society.—A recent number of the *Transcript* made mention of the incorporation of the Rhode Island Coal Company, with Henry M. Whitney as president, for the purpose of mining the anthracite coal that is found in Narragansett Bay. Attempts to utilize this coal heretofore have failed, because it lacks a certain amount of volatile matter. The paper states, however, that Henry Williams, who is an expert in coal, has solved the problem of making it commercially valuable by applying a cheap chemical solution, making the efficiency equal to high-grade Pennsylvania anthracite.—Dan Lufkin, who has for many years been manager of the Snow Steam Pump Company of Buffalo, has severed his connection there, and is now developing a natural gas proposition for The Texas Company of Fort Worth, Tex. On leaving Buffalo, he was tendered a farewell banquet by about a hundred citizens, on which occasion he was presented with "The Life of E. C. Lufkin, by John D. Rockefeller," which is largely reproduced in the columns of the Buffalo *Evening News*, and which throws a new light on the career of our classmate. Selections from this biography will be read at the class dinner next month.—Eaton came a long way to attend the alumni dinner. His headquarters are at Baltimore, where he has a contract to dredge a 35-foot channel in Baltimore Harbor. He also has an $800,000 contract with the government to dredge a channel in San Juan Harbor, Porto Rico. —The secretary has recently heard from J. F. Davenport, who makes a peep from Fall River, Mass., where he is in business under the firm name of Gage & Davenport. We hope to see him at our class dinner next month.—During the winter Newell had a very pleasant experience in the Hawaiian Islands, which he visited in the interests of the Reclamation Bureau. The Tech men there, of whom there are a number, gave him a delightful dinner at the University Club.—Bates' address is P.O. Box 118, Hoboken, N.J. He is now with the New York Central & Hudson River Railroad Company. He says that he hopes to come on to Boston before long, probably to the class dinner.—The *Transcript* recently described at length the electrical devices of the Charles River dam lock, and said, "Upon Electrical Engineer Arthur I. Plaisted, who has supervised the installation of the plant, rests the credit for the results."

1887.

EDWARD G. THOMAS, *Sec.*, 157 Congress Street, Brooklyn, N.Y.

'87's annual dinner occurred at Young's Hotel on the evening of February 20, and was attended by Cameron, Coburn, Lane, Taintor, Bryant, Fred Thompson, Stewart, Hathaway, H. W. Kimball, Wakefield, Crosby, Hussey, H. S. Adams, Very, H. H. Brainerd, Fish, Spaulding, Sever, Tripp and E. G. Thomas, and we enjoyed for a time the company of Russell of '68. For the ensuing year the officers chosen were: president, B. C. Lane; vice-presidents, George Sever and F. M. Wakefield. A committee was appointed to care for '87's interests at the second Tech reunion, and various routine business disposed of. A telegram of good cheer was sent the Northwestern Association, over whose dinner in Chicago Shortall was presiding while we dined in Boston, and the good wishes of the Chicago men were promptly returned. Taintor inveigled us into a scheme for ascertaining the average income of the men present, and stated as a result of his computations that the men present were averaging $5,924 per year each. Some of us conclude that he is not good at figures. Fish was on board the steamer "Republic" at the time she was cut down by the "Florida," and was induced to tell us of his experience, which was most interesting. He was on his way to the Azores to meet his family on their way back from Europe. Stewart has not been with us for a long time, and we were glad to have him report that his health has been restored by his life in the south and that he had returned for good to his home in Charlestown.—Winthrop Cole is now connected with the Engineering Experiment Station of the United States Naval Academy at Annapolis, Md.—Draper is at present in Europe. The newspapers recently noted that he had acquired the rights in all parts of the United States, except Rhode Island, to use a process for increasing the calorific value of coal by adding chemicals. The rights for Rhode Island are owned by H. M. Whitney, who proposes to redevelop the disused anthracite mines of that state by the use of this process.—Hobart is building a new factory for the Triumph Electric and Ice Machine Company, to provide for the steadily increasing demand for his machinery. At present the plant is running at night to get out ice machines contracted for delivery previous to the summer months, and Hobart makes no complaint of hard times. —A. R. Nickels is now located at Dee, Ore.—H. W. Kimball is superintendent of the plant of the J. E. Keelum Company at Middletown, Conn.—Walter S. Moody is at present chief engineer of the

transformer department of the General Electric Company, with headquarters at Pittsfield, Mass.

1888.

WILLIAM G. SNOW, *Sec.*, 1108 Penn Mutual Building, Boston, Mass.

Edwin S. Webster was elected president of the Alumni Association. At the alumni dinner Webster, Sawyer, Shaw, Keough, Robb, Bradlee, Underhill and Snow were present. The following items relating to '88 men appeared in the Boston *Transcript:*—

Louis A. Ferguson ('88), is the first graduate of the Electrical Engineering Department of the Institute to become the president of the American Institute of Electrical Engineers, the most distinguished office that the professional engineers of this country can confer upon each other. Mr. Ferguson is vice-president of the Chicago Edison Company, and is recognized as one of the accomplished central station engineers and managers in the country. He has held many high offices during his career, among them being the presidency of the National Electric Light Association. Mr. Ferguson recently gave a very interesting talk to the members of the Electrical Engineering Society at the Institute on the occasion of their first formal dinner of the year.

The Stone & Webster Corporation has been appointed to the important position of straightening out the entanglement of the Interborough-Metropolitan Street Railway System in New York city. The Stone & Webster Corporation is composed of Charles A. Stone, Edwin S. Webster and Russell Robb, all of '88, and Henry G. Bradlee, of '91. The extreme complexity of the street railway problem in New York city and its reference to the Stone & Webster Corporation for solution is one of the highest compliments which has been paid to its members, and the institution from which they graduated.

—B. R. T. Collins spent a few weeks in Boston this winter, returning to Texas, where he has been located since last April in connection with Stone & Webster properties.—William G. Snow has been elected president of the American Society of Heating and Ventilating Engineers.—The President invited the following engineers to accompany President-elect Taft on his trip to Panama: Arthur P. Davis, chief engineer of the Reclamation Service, Washington, D.C.; John R. Freeman, Providence, R.I.; Allen Hazen, New York city; Isham Randolph, Chicago; James Dix Schuyler, Los Angeles, Cal.; Frederic P. Stearns, Boston. The Boston *Evening Transcript* says of Hazen:—

Allen Hazen was born in Hartford, Vt., Aug. 28, 1869, and was educated

in that town, and was graduated from the Massachusetts Institute of Technology. He began his professional career at Lawrence, Mass., where from 1888 to 1893 he was in charge of the State Board of Health Experiment Station. He was in charge of the sewage disposal at the World's Columbian Exposition in Chicago in 1893, and practised his profession privately in Boston from 1894 to 1897. In the latter year he went to New York, and was chief engineer of the Albany Water Filtration plant, which was built in 1898–99. He is a member of the American Society of Civil Engineers, Boston Society of Civil Engineers, American Water Works Association, New England Water Works Association, American Chemical Society, American Public Health Association, and other similar organizations. He is the author of "The Filtration of Public Water Supplies," which was published in 1895, and has written a large number of articles on water supply and sewage disposal. His residence now is New York city.

—Harold Binney has formed a co-partnership with Seabury Cone Mastick and Herbert Gouverneur Ogden for the practice of patent, trademark, copyright and corporation law, under the firm name of Binney, Mastick & Ogden, with offices at No. 2 Rector Street, New York.—The Boston *Herald* of January 1 states:—

The combination of all gas and electric companies in the Blackstone Valley, including those of the cities of Pawtucket and Providence, for which purpose the Blackstone Gas and Electric Company was incorporated last year, was formally effected when Stone & Webster, of Boston, filed at city hall in Pawtucket a collateral trust bond of $5,000,000 to the Slater Company, trustees, to cover the bondholders of the company. The new company is the holding corporation of the Pawtucket Gas Company, Pawtucket Electric Company, the Woonsocket Gas Company and the Woonsocket Electric Machine and Power Company.

—The secretary wishes to remind those who have not done so to send in data, etc., for the second decennial class record.

1889.

PROF. W. E. MOTT, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The twentieth annual dinner and meeting of the class was held at the University Club, Boston, on the evening of February 1. The following members of the class were present: R. N. Cutter, E. V. French, Hollis French, F. S. Hollis, H. Howard, H. H. Hunt, W. S. Johnson, W. H. Kilham, L. H. Kunhardt, F. A. Laws, W. W. Lewis, J. W. Linzee, H. Loring, Jr., W. E. Mott, E. E. Peirce, F. S. Pierce, F. H. Thorp, W. W. Underhill, G. C. Wales, A. L. Williston. In the absence of the class president, W. B. Thurber,

who was ill as the result of a serious fall, Hollis French presided at the business meeting. Announcement was made of the election of W. H. Kilham as class representative on the newly organized Council of the Alumni Association. Several committees were appointed, and plans for the reunion in June next were informally discussed. It has been suggested that we hold our annual dinner in New York city occasionally, and Messrs. F. S. Pierce and A. L. Williston were made a committee to report on the matter next June. The good attendance and the "get-together" attitude of the fellows would seem to indicate that the members of the class were beginning to appreciate the desirability of renewing old friendships, and give promise of a large attendance at our twentieth reunion in June next.—W. H. Kilham has another daughter, born a few weeks since. In the Sunday *Herald* of February 28 Kilham forecasts the city of the future, with its terraced towers, aërial sidewalks, and twentieth-story foot-bridges over the streets, his prediction for the "City Beautiful" of the future. His firm has been retained to carry out the development of the State Industrial School for Boys at Shirley.—Montgomery Rollins is busily engaged upon a new book to be published by G. Routledge & Sons, London, entitled "Convertible Securities." He is also lecturing at Dartmouth College on practical banking.

1892.

PROF. WILLIAM A. JOHNSTON, *Sec.*, Mass. Inst. of Tech., Boston.

H. S. Webb gave a lecture on Wireless Telegraphy and Telephony before the Engineers' Club of Central Pennsylvania at Harrisburg, Pa., Tuesday, Jan. 26, 1909. The following clipping was taken from the Birmingham *Herald*, Jan. 31, 1909:—

"In Mr. Edward C. Wells, who has assumed the duties of general superintendent for the Hardie-Tynes Manufacturing Company, the industrial and social forces of this city have received an acquisition," said a well-known man last night. "Mr. Wells is a college man and a graduate of the Boston School of Technology. His technical education has been secured by much practical experience in large shops in the east and north, which build Corliss engines and specialize in the construction of machinery of the heavier class. He has already demonstrated his ability and made a number of friends."

—The following clipping was taken from the *Engineering Record* of Feb. 13, 1909:—

Mr. D. S. Hawkins, consulting mechanical, electrical and foundry engineer, with offices in the Rose Building, Cleveland, Ohio, is making a specialty of the legal phase of engineering, with particular reference to co-operating with attorneys where expert engineering is required in the preparation and prosecution of a case. Mr. Hawkins is a past student of Massachusetts Institute of Technology, and during the past fifteen years has been employed as draughtsman, designer, estimator, engineer and representative of a number of large engineering corporations, including the General Electric Company, the Pennsylvania Railroad, F. H. Richards, patent attorney, New York city, the Westinghouse Electric and Manufacturing Company and the J. D. Smith Foundry Supply Company.

—The following men were at the alumni dinner: Atwood, Chase, Dudley, Francis, Fuller, Hutchinson, Ingraham, Johnston, Metcalf, Nutter, Bowen, Carlson, Hall, Park, Wallace.

1893.

FREDERIC H. FAY, *Sec.*, 60 City Hall, Boston, Mass.

The class may well be proud of the honor that has come to one of our members, Charles M. Spofford, who has been appointed to succeed Professor Swain as the Hayward Professor of Civil Engineering at the Institute. The honor of Spofford's selection appears even greater to the Tech men who know the exceptionally high quality of instruction in structural engineering given by Professor Swain and what it means for one to be selected to carry on the work of so eminent a teacher. It is probably true that in no other technical school in the country is to be found a more thorough course in structural engineering than that offered by the Institute. Professor Spofford, by reason of his ability and his training at Technology, both as an undergraduate and as a graduate student, supplemented by a broad experience in active practice and by teaching experience at the Institute and elsewhere, is probably as well fitted as any man in the country to take charge of our work in structural engineering. A detailed account of Spofford's achievements is to be found in an article in this number, and will not be repeated here. It is sufficient to say that throughout his experience as an engineer he has made good in all that he has undertaken. As a teacher, he has met with noteworthy success, especially in his work at the Brooklyn Polytechnic Institute, where in his four years' stay he has brought his department of civil engineering to a plane of high standing and efficiency. In his work with Mr. C. W. Hudson

last summer in the investigation of the strength of Blackwell's Island Bridge, New York (the second largest and heaviest bridge in the world), Spofford not only gained experience which comes to but few engineers, but he showed his ability to successfully handle work of large magnitude. On the side of active practice Professor Spofford's experience is considerably greater than that of most engineers engaged in teaching; and the combination of practical experience, thorough theoretical training and sound common sense contributes in no small degree to Spofford's success as a teacher. Spofford has taken an active interest in class affairs both as a student and during his subsequent residence in Boston. He was assistant secretary of the class from 1898 to 1905, and did much efficient work in various class matters, notably in the preparation of the decennial catalogue. During this time he took an active interest also in the work of the Association of Class Secretaries, and devised and put into operation a plan by which, with the Institute's co-operation, the nucleus of the graduate organization of each class is begun in the freshman year by the preparation of a card catalogue of all members, which is corrected year by year, and turned over to the graduate secretary when the class leaves the Institute. As a member of the Income Fund Committee organized in 1904, Spofford has assisted in raising among the alumni a fund of over one-quarter of a million dollars, contributed towards the present current expenses of the Institute. In these and many other ways Spofford has shown his deep interest in all that pertains to the Institute's welfare, and, besides obtaining a teacher fully competent to maintain the high standards in teaching set by Professor Swain, the Institute gains also by the return to her Faculty of one of her most loyal sons.—Edward Gardner Pease, who was one of the popular members of the class in our student days, had scarcely been heard from since he left the Institute until very recently. He is in business in Dayton, Ohio, under the firm name of the Buckeye Iron and Brass Works, and is engaged in the manufacture of cotton and linseed oil machinery, tobacco-cutting machines and a full line of brass goods for engine builders and steam fitters. During the Spanish-American War he served in the First Ohio Cavalry. In public affairs he has served three years in the city council at Dayton, and is at present a member of the Ohio Commission for the Blind and chairman of the playground committee of the Vacation School Association. In response to a request for a short personal history he writes:—

The only thing that would be of any interest is a trip I took to Russia in 1902. In that year two representatives of the Ministry of Appanages, which has charge of all of the estates of the czar and all of the royal family

of Russia, came to this country to purchase the machinery for a complete cottonseed oil mill. Our firm secured the order, and in December, 1902, with one of our best mechanics I left for Russia. This mill was erected at a place called Bairam Ali in Russian Turkestan. This village is on the ruins of the ancient city of Merv, and is in one of the most interesting countries on the globe. Being so very far away, not many travellers are attracted there, but the ruins through the country, at Samarkand, Bokhara, Merv and many other places are among the most wonderful in the world. I have a collection of photographs which I took over there that I believe is the best in existence anywhere. I saw quite a lot of Russia, spending three weeks in Moscow, two weeks in St. Petersburg, a few weeks in the Caucasus Mountains, and rode over the celebrated mountain pass from Vladikaukaz to Tiflis. Have crossed the Caspian Sea six times and been as far east as Tashkend. I left Russia the last day of August, 1903, and we built, way down in the heart of Asia, the finest cottonseed oil mill in the world. I have a gold watch and chain and a diploma given me by the czar for having erected the mill on his private estates.

—Notable among the weddings of the Lenten season in Boston was that of Miss Edith Sherman, daughter of Mrs. William H. Sherman, and Henry Adams Morss. The ceremony took place on Wednesday afternoon, March 10, at the home of the bride's mother, 463 Commonwealth Avenue, and was performed by Rev. George A. Gordon, D.D., pastor of the Old South Church. The house was decorated with a profusion of flowers, and a deep bay-window in the drawing-room was transformed with greenery and white roses into a bower, where the bridal couple stood. The bride was unattended, and was given away in marriage by her mother. Harry H. Walker served as best man, and for the reception which followed the ceremony the ushers were John Wells Morss, Henry Hildreth, Samuel B. Gloss and Samuel Braman (M. I. T. '93), of Philadelphia. Mr. and Mrs. Morss sailed from San Francisco about the first of April to spend their honeymoon in Japan.—Percy H. Thomas presented a paper before the Engineers' School, United States Army, at Washington, D.C., in February, upon the subject of "Hydro-electric Developments and High Tension Practice." This paper will be published in "Professional Memoirs," a government publication, in the near future. He also addressed the Washington branch of the American Institute of Electrical Engineers on "The History and Development of Mercury Vapor Apparatus."—William G. Houck, of Buffalo, is president for the ensuing year of the Engineers' Society of western New York.—James A. Emery, formerly vice-president and general manager of the Birmingham (Ala.) Railway Light and Power Company, has been since August, 1908, with Ford, Bacon & Davis, 115 Broadway, New York city,

in charge of their report work on street railways, electric light plants, etc. From August until January last he was at Toledo, Ohio, reporting upon railway and electric systems there.—William W. Peabody is now assistant engineer with the New York city Board of Water Supply, and located at White Plains, N.Y. He is one of the members who have not been heard from for many years. Upon leaving the Institute in 1891, he served for four years as inspector of sewers and street construction at Newton, Mass., and a year in a similar capacity at Brockton. In 1896–97 he was resident engineer with the Massachusetts Highway Commission, in charge of the building of a highway at Tyngsboro. After a few months' service as engineering inspector with the Metropolitan Water Board of Boston on the construction of the Wachusett Aqueduct, he entered the service of the Proprietors of Locks and Canals, Lowell, Mass., in January, 1898, where he was engaged on engineering work for five years. In 1903 he was principal assistant engineer of the Commission on Additional Water Supply of New York city, and in 1904 was assistant engineer with the New York state engineer in charge of state road construction. After a year and one-half as assistant engineer in the topographical borough, Borough of Queens, New York city, he entered the service of the Board of Water Supply in April, 1906, where he is at present in charge of the department office of the southern aqueduct department at White Plains.—James S. Wadsworth is at present a student at the Massachusetts College of Osteopathy, Cambridge, Mass. For about a year and a half after leaving the Institute he was with the General Electric Company at Lynn and Schenectady. In 1893 he entered the service of the New England Telephone and Telegraph Company, where he remained fifteen years in various capacities, as inspector, special inspector, chief clerk of the general superintendent's office at Lowell, manager of the Manchester (N.H.) exchange, travelling foreman on switchboard construction and electrician in the engineering department. Wadsworth is married, and lives at 187 Highland Avenue, Sonerville, Mass.—George Benton Smith entered the ministry of the Methodist Episcopal Church in 1907, and is settled at present at Yalesville, Conn. After leaving the Institute, he entered Wesleyan University, Middletown, Conn., in 1891, graduating in 1895. During the two subsequent years he was state college secretary of the Y. M. C. A. of Illinois; and in 1897, after his marriage to Miss Bertha S. Dates, he went to Madras, India, where he served as general secretary of the Y. M. C. A. there until his return to the United States in 1904.—Myron H. Hunt was elected a fellow of the American Institute of Architects at the annual

meeting held in Washington, Dec. 17, 1908. Technology is well represented among the officers of American Institute of Architects, Cass Gilbert ('80), being president and four other Technology men being numbered among the fellows of that Institute.—Miss Clara A. Bliss has been professor of chemistry at Wells College at Aurora, N.Y., since 1894.—A. F. Bemis has recently been made president of the Bemis Brother Bag Company, located at 89 State Street, Boston, Mass.—Burt L. Fenner is a member of the firm of McKim, Mead & White, architects, 160 5th Avenue, New York, N.Y. He has been with this firm continuously since leaving the Institute in 1891, and was admitted to partnership Jan. 1, 1906. Fenner is married, and lives at 304 West 82d Street, New York.—Richard E. Meserve is following the profession of irrigation engineer, and is located at 535 Main Street, Grand Junction, Col. He writes:—

After leaving Tech, I came west to grow up, and found architecture unsuited to the state of civilization in these parts. I then worked into the two staples of the earth, land and water, and since the national recognition of this great western problem—irrigation—I have found my calling.

I have been engaged for several months on an irrigation project under the "Carey Act," for which Congress has within the past few days passed an act opening this former Ute Indian reservation to the provisions of that act. Great is Roosevelt! May his shadow increase!

—At the annual dinner of the Alumni Association, January 14, twenty-five members of the class were present, as follows: J. C. Abbot, Barnes, Baxter, Bemis, E. B. Carney, Crosby, Darrow, Dawes, C. B. Davis, Densmore, Edwards, Fabyan, Fay, W. S. Forbes, Glidden, Keith, Keyes, Latham, Morss, Parks, Phinney, F. D. Smith, Soley, Taintor, J. F. White. On the day following the alumni dinner an enjoyable luncheon was held at the Boston City Club, with nineteen men in attendance. Suitable gifts were presented to Henry Morss and J. B. Baxter, whose engagements had been announced at the dinner the night before. Those present at the luncheon were: J. C. Abbot, Baxter, Bemis, Bremer, E. B. Carney, Dawes, Darrow, Fay, Glidden, Keith, Keyes, Morss, Parks, Phinney, E. S. Page, Pickert, Soley, Taintor and Wingate.

1894.

PROF. S. C. PRESCOTT, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Phelan has just recovered from an attack of scarlet fever which kept him away from his work at the Institute for several weeks.

Fortunately there were no bad after-effects, and he is now looking in first-rate condition again. In addition to the congratulations on his speedy recovery, he and Mrs. Phelan are receiving congratulations on the birth of a son, Robert, on January 1.—McKibben visited the Institute for a short time early in February. As head of the Department of Civil Engineering at Lehigh, he is making a very successful record.—H. R. Batcheller is also one of the '94 men who get back to Boston from time to time to use the libraries and laboratories in professional investigations. "Batch" has recently been in the city for a few weeks on this and other business matters.—The class was well represented at the alumni dinner, about sixteen of its members being present to greet the new President. As the secretary was at that time on the way to Florida, he did not attend, although it was with sincere regret that such an important and interesting occasion was necessarily missed. The secretary can recommend cruising among the Florida Keys to any who are fortunate enough to be able to get away in midwinter for a few weeks of rest. He spent about two weeks in this way with Mr. and Mrs. W. L. Underwood. Mr. Underwood is well known as a naturalist and photographer of wild life, therefore an experience of this sort is a chance of a lifetime. Taking a small cruising boat at Miami, we visited the various fishing grounds, keys and inlets, had an opportunity to see the construction of the Key West extension of the East Coast Railway, explored the region around Cape Sable, and entered some of the many brackish lakes where waterfowl congregate in immense flocks. Following up the west coast to the Ten Thousand Islands, we saw the first attempts to utilize the mangrove, both black and red, which in that region attains a considerable size. The wood is very hard, heavier than lignum-vitæ, and is finding some use in cabinet work and as a fine flooring and finish wood. At the mill, where operations are just beginning, we were told that the supply was good for probably fifty years. Not the least interesting feature of the trip was a visit to the Everglades and a chance to see the work now being carried on in reclaiming those vast watery plains. Ex-Governor Broward, whom we met at Fort Lauderdale, and who is the father of the plan for reclamation, told us that it is probable that about three million acres of land of exceptional fertility can be recovered in this way. The project is certainly of great interest.—H. S. Reynolds is with the Ludlow Manufacturing Company of Ludlow, Mass.—There was a small gathering of '94 men at the Technology Club on Saturday evening, March 20, to consider plans for June. Another will be held on Friday, April 9. All the fellows should plan to be on hand for the Reunion.

1895.

CHARLES H. PARKER, *Sec.*, 39 Boylston Street, Boston, Mass.

Captain Azel Ames has resigned his position as signal engineer electric zone, New York Central & Hudson River, and is connected with the Kerite Insulated Wire and Cable Company, New York. His office is 30 Church Street, New York city. The following paragraph, taken from an account of him in the *Railroad Age Gazette* of Dec. 11, 1908, is truly illustrative of him.

He is a member of the American Railway Engineering and Maintenance of Way Association and the Railway Signal Association, the Transportation Club and the Army and Navy Club of New York and the Army and Navy Club of Washington. He is also second lieutenant, Coast Artillery Corps, National Guard of New York. It is not saying too much to mention that Captain Ames has the essentials, thoroughness and an unimpeachable character. Combined with these qualities, his restless energy should be of great value in his new work.

—A small dinner of '95 men was held at the Tech Club, Boston, on Jan. 18, 1909, to discuss plans for the All-Technology Reunion in June. President F. T. Miller was in the chair; following men present: W. S. Chase, E. H. Clapp, J. Williamson Cooke, W. E. Davis, Jr., E. L. Hurd, H. D. Jackson, J. L. Newell, C. H. Parker, W. D. Parker, G. A. Rockwell, E. A. Tucker, R. J. Williams, W. H. Winkley. Newell, Rockwell, Hurd and Clapp were appointed a committee to plan an outing for June 5 and 6, the Saturday and Sunday previous to the All-Technology Reunion. The idea is to leave Friday, June 4, for some seaside resort which is not too public, where we can have boating, fishing, swimming, tennis, golf, baseball, etc. Committees on attendance have been appointed from each course to drum up all the delinquents who can come, but wouldn't unless urged sufficiently.—Sias and George Sheppard were appointed a committee on stunts at Nantasket, on auto trip, at Pop Concert, etc. "Nuf sed."—The following changes of address have been received: John Winfield Cooke, Klamath Falls, Ore.—W. A. Drake, The Bourse, Philadelphia, Pa.—George E. Howe, Wauseon, Ohio.—Gerard H. Matthes, care of Central Colorado Power Company, Denver, Col.—Walter C. Powers, Long Hill, Springfield, Mass.

1896.

PROF. CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Mr. Willard H. Colman has sent a copy of his pamphlet upon the chiropractic, a new science which was discovered by Dr. D. D. Palmer about thirteen years ago. It has been found that many organic affections are due to displaced vertebræ of the spinal column, which cause pressure upon the nerves. The chiropractic practitioner undertakes to restore such displaced vertebræ to their normal position. Mr. Colman is now acting as a chiropractor at 1319 State Street, La Crosse, Wis., and the pamphlet reads very interestingly.—Ben Hurd has followed the lead of Rockwell, and has donated a cup to be competed for annually at the spring class meet in the 120-yard high hurdle event. This cup is to be held permanently by its winner, and a new cup will be supplied each year.—John Manahan at last accounts was up at Milan, near Berlin, N.H., looking after the power end of the installation of a concentrating mill on an old pyrite mine located at that place.—Butler Ames is still figuring prominently at Washington. He was strongly interested in pushing the bill for Appalachian Forest Reserves which went down to defeat during the last days of Congress. He is active in the pursuit of his experiments upon aërial navigation.—Mortimer A. Sears has gone to Denver, Col., to take the position of inspector in the Land Department. For many years the Land Department has not investigated fully the land which had been taken up under the various acts of Congress, but now such land is carefully investigated before it is sold, to determine whether it is mineral land, homestead land, coal land, desert land, etc. To determine these points satisfactorily, they have come to employ technically trained men, and Sears thus comes to be a special agent with the title of mineral inspector. His district covers the state of Colorado and parts of Nevada.—George E. Stratton was in town about February 1, looking up his old friends. He is now with the United States Reclamation Service, with address at Washington.—The Class of '96 turned out in good shape at the annual alumni dinner at Horticultural Hall in January. The following were present: Pingree, Conant, Daniels, Hersey, Sanderson, Tucker, Lythgoe, Hopkins, Defren, Hayward, W. Hedge, Locke, Harkness, Hurd, Rockwell, H. W. Brown, Maclachlan, Lockwood, Root. Hurd came on from New York, Root from Pittsfield, Pingree from Providence, Tucker from Lynn. The others were all located close by. All agreed that we contributed our share of noise.—On December 30

last at Granville, N.Y., occurred the marriage of Dr. William D. Coolidge, professor of chemistry of the research laboratory of the General Electric Company and assistant director in the laboratory, to Miss Ethel Westcott Woodard, eldest daughter of Mr. and Mrs. D. D. Woodard, of Granville. The bride studied in Germany at the Kadelbach Seminary and University of Berlin for three years. After her return she taught German in the Granville High School, and for the past three years has been teacher of modern languages in the Schenectady High School. The wedding was a family one, and after the dinner Dr. and Mrs. Coolidge left immediately on their wedding trip.—J. E. Woodwell, of the firm of L. B. Marks and J. E. Woodwell, New York city, has been retained by Messrs. McKim, Mead & White, architects, as consulting engineer for the entire mechanical and electrical equipment, including the heating and ventilation, electric lighting and power, mail handling devices, etc., of the new United States post-office to be erected at the Pennsylvania Terminal Station in New York city. The cost of this installation will be upwards of $500,000.—The address of Dr. J. Arnold Rockwell, president of the Boston Homœopathic Society, at the annual meeting in Jacob Sleeper Hall early in January, considered Hahnemann's Organon in the Light of Recent Scientific Discoveries and Current Medical Practice. After explaining the principles of homœopathy, Dr. Rockwell took up the experiments of Professor J. C. Bose, of Calcutta University, India, who had shown that the principles of homœopathy are verified in every detail in plant life. Dr. Rockwell made a strong plea for a thorough test of the homœopathic principle of medicine in comparison with the allopathic, and proposed that the test be made side by side upon selected patients from the Boston Floating Hospital. His plan proposed that a number of the little patients, of the same general condition as far as possible, be divided into three groups, one of which would be given expectant treatment, the second allopathic treatment, and the third homœopathic treatment. Dr. Rockwell's address was well received, and his proposition was felt to be worthy of meritorious consideration.—Senator E. C. Hultman, of Quincy, has found the demands of public life so exacting that he is living in Boston this winter at Hemenway Chambers. Senator Hultman went into the fight as a champion of purity in politics, and won out only after a hard struggle. He is putting every minute of his time upon his duties as a legislator. He is chairman of the Committee on Public Lighting and a member of the Committees on Water Front and Taxation. The Committee on Water Front is a specially important one at the present time, because it has to do with the

development of the shore line of Massachusetts. Senator Hultman recently gave a talk in Quincy upon the duties of a legislator, and explained the multitude of demands that come for a man who is in public life.—E. S. Mansfield made a trip to Washington over the inauguration, combining business and pleasure. He was able to see some of the Tech men while there.—The announcement was made of the engagement of Miss Laura Toppan, of Cambridge, to Ben Hurd, of New York city.—Bradley Stoughton has been spending a few days in Boston and Cambridge. He delivered an address before the New England Foundrymen's Association. He has severed his connection with Columbia University and with Professor Howe, and is at present acting as consulting metallurgical engineer, with offices in New York city, Philadelphia and Pittsburg.

1897.

JOHN ARTHUR COLLINS, *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

The engagement is announced of Miss Marion Walsh, of Newport, R.I., to Earl Potter Mason, of the Newport Engineering Works. They will be married at Easter.—The secretary has just heard for the first time since the class graduated from one of the members who was with us in the first years of the course. Louis F. Buff left the Institute to go with the New York, New Haven & Hartford Railroad as an assistant engineer in connection with the elevation of the tracks on the Providence division. After three years, he spent three additional ones at the Lawrence Scientific School. In 1899 he went into business with the firm of Buff & Buff Manufacturing Company, of Jamaica Plain, makers of precision surveying instruments. This company now have a weekly output of twenty instruments, and Mr. Buff is secretary and assistant manager. He was married in 1907 to Miss L. S. Frost. They have one child, Laura Edith, born September, 1908.—Proctor L. Dougherty (VI.), has been made inspector of electric light plants *vice* J. E. Woodwell ('96), and has charge of all electric plants in the United States that are under the control of the Treasury Department.—Walter E. Spear (XI.), is now chief engineer of the department of water supply, Borough of Brooklyn, having assumed the position on January 1 of this year. For the previous three years he had been in charge of the Long Island work of the board of water supply.—James M. Brown (II.), formerly with the Casey-Hedges Company of Chattanooga, Tenn., is now superintendent

of the Lyons Boiler Works of De Pere, Wis. They are the makers of a new patented boiler, which, Brown says, is to be much talked of in the near future.—The secretary sent out a call to all '97 men in the neighborhood of Boston to meet at the Technology Club on Tuesday evening, February 23, to talk over the plans for the coming reunion. A few men, Bradlee, Carty, Hopkins, Breed, Worcester, Cowles, Humphreys and Fuller, appeared. The majority seemed to favor an informal dinner on Monday evening previous to the smoker at one of the foreign restaurants down town; then on Tuesday, with the ladies, meet as a class at the dinner down at Bass Point. We would have all the afternoon before us then, and a jolly reunion could be had. After more definite arrangements are made by the General Reunion Committee, a special circular will be sent out, detailing any further plans that may have been made.—In the *Textile Manufacturers' Journal* for January, 1909, there is an article by Eames (VI.), on the "Effect of Textile Schools on Textiles." Mr. Eames is principal of the Lowell Textile School, and the article lists the positions held by nearly two hundred of the graduates of this school, and also gives an idea of the salaries received.

1898.

PROF. C.-E. A. WINSLOW, *Sec.*, 157 Walnut Street, Brookline, Mass.

The second informal reunion for the season was held at the Trinity Court Bowling Alleys on the evening of February 16. Chase, Coburn, Coombs, Cornell, Curtis, Dodd, Edgerley, Perley, Robinson, Russ, Stillings, Wadsworth, Wing and Winslow were present. In an inter-course competition, Course VI. won by a large score, though Course IV. made the finest appearance on the alleys.—Curtis has moved his law office to 84 State Street.—Humphrey sailed for Naples on the "Canopic," February 13.—G. L. Smith has opened an office for the practice of architecture at 22 Congress Street, Boston.—I. M. Chace, Jr., has come east from Tucson for a time, and his address is now 70 Borden Street, New Bedford.—Fleisher has moved from 67 Highland Street to 96 Brunswick Street, Roxbury.

1899.

HERVEY J. SKINNER, *Sec.*, 93 Broad Street, Boston.

Phelps has recently completed a very important investigation on the pollution of streams by the waste from sulphite pulp mills.

The work was done at the Sanitary Research Laboratory and Sewage Experiment Station at the Institute, and embodies a study of the possible remedies. The results are published in Water Supply Paper No. 226 by the United States Geological Survey.—Sherrill has returned to his duties at the Institute after a two years' leave of absence.—Phalen has received the degree of Doctor of Philosophy from George Washington University. The subject of his thesis was "Economic Geology of the Kenova Quadrangle in Kentucky, Ohio and West Virginia."—The following changes of addresses have been received: T. W. Bailey, 220½ West Main Street, Oklahoma City, Okla.—H. M. Case, manager Light, Heat and Power Company, Connersville, Ind.—C. D. Drew, care of J. G. White & Co., Limited, Chimbote, Peru, S.A.——T. J. Driscoll, 2 Parker Hill Terrace, Boston, Mass.—J. B. Ellery, Annisquam, Mass.—A. W. Grosvenor, 469 State Street, Flushing, N.Y.—Russell Hall, South Windham, Me.—E. W. Hammond, 400 Plymouth Avenue, Rochester, N.Y.—W. A. Hazard, 948, 115 Adams Street, Chicago, Ill.—H. P. James, Cutler-Hammer Manufacturing Company, Milwaukee, Wis.—F. L. Lacaff, 405 North Washington Street, Nevada, Mo.—John Magee, 1128 First National Bank Building, Chicago, Ill.—W. H. Mandeville, 223 North 1st Street, Olean, N.Y.—C. L. Morgan, 378 Wabash Avenue, Chicago, Ill.—W. R. Parker, 74 Meridian Street, Melrose, Mass.—G. H. Priest, 147 Milk Street, Boston, Mass.—A. W. Proctor, 41 Park Row, New York, N.Y.—L. Rich, 4 Glenwood Boulevard, Schenectady, N.Y.—H. Sawyer, Boisé, Idaho.—H. H. Schmidt, 19 Municipal Building, Brooklyn, N.Y.—F. R. Sites, 325 C Street, Oakmont, Pa.—R. W. Stebbins, R. F. D. No. 1, Hood River, Ore.—G. B. Street, Rye Valley, Ore.—F. Tappan, Central Building, Seattle, Wash.—G. S. Tiffany, Fort Logan, Col.—R. M. Vining, 15 Railroad Avenue, Beverly, Mass.—F. A. Watkins, 24 Ruthven Place, Summit, N.J.

1900.

H. E. Osgood, *Sec.*, Room F, Chamber of Commerce, Boston, Mass.

On Monday evening, March 1, there was a meeting of the '00 men in the Boston district at the Tech Union. Those who came together to dine informally before the meeting were Ziegler, Dimock, Weeden, Gibbs, Kattelle, E. F. Brigham, E. G. Allen, Bugbee, Hunt, P. R. Brooks, Wastcoat, Bowditch, Jennings and Neall. Later H. E. Osgood, Fitch, Hodsdon, Brown, Cutting, Russell,

Beekman, Warren and C. A. Richardson dropped in. There was a very jolly reunion and plenty of experiences to exchange, especially as a number of the men had not seen each other for nine years or more. The meeting was furthermore graced by two prospective divines, Dimock, Newton Theological Seminary, and Gibbs, Episcopal Theological School, Cambridge. During a part of the dinner Wastcoat was found subduedly studying these "engineers of the art of flying," but managed to recover his usual gayety, nevertheless. The fellows tried over some of the songs which the Alumni Association has had prepared for the Second Tech Reunion. Gibbs played the accompaniments with his usual elegance and spirit, and the effect of hearty co-operation, if not of perfect singing, was truly impressive. It is quite an idea for the 1900 men to be found singing together. I. W. Litchfield ('85), who is giving a great deal of time to the plans for the reunion, dropped in and interested the men mightily by an informal talk on his recent trip to various cities in company with President Maclaurin and other matters of vital interest in connection with Technology. The plans which he outlined for the coming reunion in June showed that nothing was to be left undone to make the occasion a memorable one, and they will make every Tech man who comes, even from the most distant point, feel surely repaid. Some of the proposed features suggested a comparison with some of Thompson & Dundy's Hippodrome stunts. Neall then explained that a self-constituted committee, which might be called the Decennial or Reunion Committee, consisting of Bowditch, P. R. Brooks, Gibbs, Neall, Wastcoat and Ziegler, had been formed to assist the secretary with the extra work incident to getting out a new directory, also to make the arrangements for our decennial, which is to be held this year instead of next, in order to enable the men to attend both the reunion and decennial without making two trips to Boston. As a preliminary measure, every member of the class has been communicated with in order to get information regarding the different members of the class. This information will be used in the class directory, and part of it you will find following. It is hoped that every member of the class will assist this committee by doing his part, and furnish the information which will be requested from time to time.—C. A. Richardson announces that he was married last fall, and is now living in Somerville. He is at present working on the plans of the Boston Elevated Railway Company for the new tunnel which is to connect Cambridge and Boston. Before coming east, he was connected with the survey preliminary to laying out the road-bed of the Grand Trunk Pacific, which is now being rapidly constructed.

He states that, owing to the absence of sharp curves and to the fact that the steepest grade is not over four-tenths of one per cent., the road-bed will be finer than that of any transcontinental railroad. —After having been away from Boston since finishing at the Institute, Ziegler has returned to Boston to become treasurer and general manager of the New England Dairy Supply Company. One of the things which is sold by this company which is of popular interest is the milking machine. Ziegler describes with considerable effect some of the public appearances which he has made at country fairs. Without detracting from his own ability as a raconteur, he really needs a Kipling to do him justice. He was married in the latter part of 1904 to Miss Mabel Hale (Radcliffe, 1902).—From the standpoint of general interest, one of the most interesting letters we have received from the class was that received from Ford, who writes:—

Since leaving Tech in 1901 after a post-graduate year, I have spent two years in Peabody & Stearns' office in Boston, three months in Guy Lowell's office, then four years in Paris, graduating in architecture from the École des Beaux-Arts. During this time I travelled the better part of a year, all told, in Italy, Switzerland, France, Belgium, England, etc. I have been back in New York two years,—three months in the office of Hale & Rogers and a year and nine months with George B. Post & Sons, architects, where I am now chief designer. A year ago this last summer I went as a delegate to the Eighth International Housing Congress in London.

My chief interest in life is just along this line; that is, architecture as applied to the problem of housing of the working people and as applied to the social questions in general. To that end I have been living in model tenements and social settlement houses ever since my return from abroad.

It is a vital subject and an intensely interesting one, one that is becoming more and more urgent every day.

Yet, strangely enough, no architect in America has ever taken it up in a broad and humanitarian way. Why, the possibilities of improving living conditions, be it in the home, the shop, the factory, the school, the bath, the Institute, the playground, or whatever it may be, are simply immense. A great deal has been done in an unco-ordinated, random way from a purely scientific standpoint, but you will look almost in vain for architectural training as applied to these problems where you may detect real heart and sympathy in the work.

The field is boundless. A spirit of philanthropy in the broadest sense is spreading rapidly in America. It must find an outlet in bettering the condition of those who are powerless to help themselves, and it must have men of the requisite training who can logically and sympathetically bring about concrete results,—results which will make for a happier, nobler and better life among our fellow-beings.

To this end I have published some twenty-five or thirty articles in architectural magazines, and am now spreading out into the general magazines.

I have been and am identified with splendid work of the Committee on Congestion of Population in New York city under Benjamin C. Marsh, and I know and am in communication with many of the men most prominent in this field at home and throughout Europe, for Europe is far ahead of us here.

I have been and am collecting a great deal of material along these lines for the Museum of Social Ethics at Harvard University, far and away the most comprehensive social museum in the world, thanks to the earnestness and zeal of Professor Francis G. Peabody.

The deeper into the subject I get, the more fascinating it becomes. The possibilities are infinite, and within this generation many of them are bound to become actualities.

He apologizes for writing at such length, but not only is there no occasion for it, but we wish more of the fellows would do likewise.—The reference to Gibbs will surely interest all of his old friends. His present work is a gradual development, and is thought by him to be much helped by the engineering training which he has had. The first two years after graduation Gibbs spent with the Brown Hoisting Machine Company in Cleveland. A severe attack of typhoid fever obliged him to abandon the work and return east to convalesce. His later engagement was for a while in western Massachusetts at Greenfield, and then at United States engineer's office at Newport, R.I., and lastly two and a half years with the Eastern Concrete Construction Company on inside and outside work. There is much to speculate on in this development, and there is no doubt that the idea of an engineer as a rector would suggest a bang-up result.—Those of the 1900 men who took part in the Walker Club theatricals are amused to find themselves well represented among the Boston men. For example, Gibbs kept up the traditions by playing Mr. Golightly in "Lend me Five Shillings" and Marmaduke Woodcock in "Woodcock's Little Game."—Howe, who took such an important part in our days at Tech, writes as follows:—

You have asked of me a rather difficult as well as embarrassing thing—embarrassing in that it might appear as though nothing more serious had occupied my time than play acting, also difficult because the names of both plays and parts have slipped my mind.

The year after graduating in Frankfurt-am-Main, Germany, the part of a young and lovely (?) but misjudged woman was given me,—my only appearance on foreign boards. Then at intervals I have been different characters, such as Christopher, a mollycoddle (no acting needed), straight male parts requiring delicate love-making (quite a few of these), a discharged

Irishman, a wheezy old country fellow, Simon Pinner, who loved to "set and whittle," then back to a sweet old Vermont mother, who could both knit and darn [Howe's writing made this look like dam]. This winter small male parts in "The Ulster," "A Regiment for Two" and Mr. Cox of "Box and Cox" have been my share in entertaining friends.

—Neall witnessed the last-mentioned performance, and reports that Howe's acting was fully up to Walker Club standards. He also said that several weeks before the performance Howe requested the loan of a rather loud pair of plaid trousers which he happened to be wearing at that time. It took some presence of mind to guess for what they were intended. The fact that they have lent support to the drama, and that they are now about to be laid on the shelf, is a great gratification to all Neall's friends.—S. B. Miller recently dropped into town on his way back to Marquette, Mich., after attending the superintendents' meeting in New York of the various E. I. du Pont de Nemours Powder Companies. Miller is assistant superintendent of the Marquette plant, and reports interesting work and a happy life. He is not married yet, but his photographs of camping parties, skating affairs and other attractive outdoor features with which northern Michigan abounds indicate that he is not wanting in fair friends.—Ingersoll Bowditch entertained the special '00 committee at dinner at the Puritan Club on February 15. —E. F. Brigham on March 5 announced his engagement to Miss Phyllis S. Lindsey, of Santa Monica, Cal. Since graduation Brigham has become quite a horseman, and is often seen riding through the Fens.—Kattelle was married to Miss Nellie Feagles, of Toledo, Ohio, on Oct. 1, 1908, and should be glad to see all his old friends at 205 Grove Street, Auburndale, Mass.—A. B. Briggs writes:—

I trust that I may find time in the future to get interested in a more substantial manner than mere approbation in our class affairs, and I think I see it ahead. Till now I have had all that I could swing to, and while of course, I still have it in a way, I will not have perhaps to do so much myself, but direct the efforts of others more.

Briggs is in the office of chief engineer, Boston & Albany Railroad, Boston.—Robert H. Clary was recently in Boston, and left his address as Hotel Somerset, 47th Street, New York city.—D. E. Maxfield writes from Philadelphia as follows:—

The most important news in my family is the arrival of a small boy, now eight months old.

As far as business goes, my work has kept me hustling in spite of the dull times. I have charge of the construction department of D'Olier Engineering Company, who do a considerable amount of government and munici-

pal power plant and pumping plant work. We are sending two 2,400 horse-power boiler plants to the Isthmus, some 1,700 tons of material altogether. We have contracts in British Columbia, Colorado, California, Texas, Illinois and a considerable amount of work nearer home. We do a considerable business in centrifugal pumps.

—S. D. Graff, after eight years' connection with the Westinghouse Machine Company, is now with the Simplex Electrical Company, 110 State Street, as a member of their sales organization. Graff has been living some five years in Boston, and is much devoted to sport, business permitting. This takes the form of boating in the summer time and fencing, boxing and skating in the winter. Any one wanting engagements for a bout to celebrate the reunion please telegraph.—Emil F. Vogel was recently in Boston on a vacation. He is now with the Lackawanna Steel Company as master mechanic of the coke department of the West Seneca plant, Buffalo. Vogel looks very well, notwithstanding the heavy demands that are often made on his time. He says his office hours are likely to be from 6 A.M. to 7 P.M., with a twenty-four hour turn thrown in for a fillip. One can easily imagine the importance of this work, however, since steel plant operation consists of such intimately connected departmental activities. For two years after graduation Vogel was connected with the Case Manufacturing Company on hoisting machinery. This he followed up by six months with Wellman-Seaver-Morgan Company of Cleveland and six months with the M. H. Treadwell Company of Lebanon, Pa.—C. V. Merrick writes as follows:—

I note that the class of 1900 is preparing to do a stunt at the 1909 reunion. I am not certain how things will work, and whether it will be possible for me to be at the reunion; but, if there is to be a real stunt, business be hanged. I will come, and make sure our behavior is kept up to its previous high-pressure standard. I am now acting as supervising architect on the New York State Education Building ($4,500,000), a structure which is to house the state museum, library and education interests. These interests are now housed in the state capitol and scattered about Albany, and it is expected that greater facilities and better education for the children of New York state will be possible where an organization, executive and board of regents are to be housed under one roof.

Previous to starting this work with Messrs. Palmer & Hornbostel, I represented Mr. Francis H. Kimball, architect, during the erection of the City Investing Building (open to the public in May, 1908). If you have been in New York recently, you will remember the white thirty-two-story sky-scraper just north of the Singer tower, located at the corner of Cortland Street and Broadway.

Previous to the erection of the City Investing Building I represented the

same architect on the Brunswick Site Building, corner of 26th Street and 5th Avenue, and before that I was with Messrs. Trowbridge & Livingston for five years, erecting while with them the Salomon house, corner of 83d Street and 5th Avenue, the mansion for Mr. Henry Phipps, corner of 86th Street and 5th Avenue, house for Mr. Hawley T. Proctor, 11 East 52d Street, and finally the Altman store at the corner of 5th Avenue and 34th Street.

I have one child, a boy, Alden Chester Merrick, now about two years and a half old. Mrs. Merrick and I took a trip this winter to the south, and on the way stopped off at Atlanta, and saw Mr. Harry Leslie Walker, commonly known as Hec. He still wears that same angel face, but is doing some good architecture despite his facial characteristics. Unfortunately, I was unable to see Mr. Collier while at Atlanta, as he was away at a wedding.

Keep me posted as to the stunts proposed for the 1909 reunion, and let me know how many of the old gang are going to be back.

—Wastcoat sends in the following from H. W. Oxnard:—

I have run across surprisingly few Tech men in my travels thus far. While camping on a mountain top in southern Mexico, I discussed the merger with a young Harvard man whom I found there in charge of a mine, and through Mexico and the north-west I knew men from Berkeley and the western state universities, but not a Tech man in all that region.

I am always glad to read the class news in the REVIEW, and will not forget to contribute when I have anything of interest to write.

—W. R. McAusland on March 6 writes Wastcoat as follows:—

I am doing newspaper work in Chicago and leading a simple and single life. There is an eminent live M. I T. alumni organization here, but I don't encounter any 1900 men. Apparently, my classmates do not concur in my opinion that this is a charming place of abode. I hope to hear from "1900" again, and should be glad to know when any portion of the class is in Chicago.

—This last fall Wastcoat came back to Boston after severing his connection and interest in the Ellis-Chalmers Company as treasurer. He is now president of the Harmon, Wastcoat, Dahl Company of Boston, which firm controls five paint and hardware stores, and is distributor for the Matheson Lead Company and F. O. Peirce Company of New York. Last month he was elected vice-president of the Chadeloid Chemical Company of New York, which company owns about sixty patents on paint and varnish removers, and has as licensees all the large paint concerns of this country, and is known in the trade as the Remover Trust. We extend our congratulations to Wastcoat, and also express our satisfaction that this important corporate influence is now in our midst.—E. H. Davis writes from Purdue University that—

It is a good thing that the class is about to emerge from its hypnotic coma. In another year it would be ten years old, and should go into long trousers. We should publish a book, and give our members a chance for a literary gloat over their notorosity. I, for example, have become a member of the North-western Alumni Association, and have personal police escort every time I go to Chicago.

This is not all by a long shot, but it is reserved for publication in full in the proposed class flyer. It is evident that, although his name is next to the top in the department of history and economics, he is the same Davis as of yore.

1901.

R. L. WILLIAMS, *Sec.*, 30 Waban Hill Road, Chestnut Hill, Mass.

Frederic G. Clapp recently delivered a lecture before the Academy of Science and Art at Pittsburg, his subject being "Influence of Geological Structure on the Occurrence of Oil and Gas." Subdivisions of the lecture were "statement of the 'anticlinal theory'; limitations of this theory, and history of the controversy as to its value; different geological conditions of the different fields; proof of the value of geology in predicting the value and extent of the fields; and conditions of accumulation of oil and gas."—Allen B. McDaniel is professor of civil engineering at the University of South Dakota.—F. H. Sexton is president of the Nova Scotia Technical College, which offers courses in mining, civil, electrical and mechanical engineering. He is married, and has three children.—D. L. Ordway is with the National Carbon Company of Cleveland, Ohio, where he is a research chemist in the battery department.—Charles J. Bacon as steam expert for the Illinois Steel Company has general supervision of their power plants and experimental engineering.—Robert B. Norton is an assistant electrical engineer on the electrical equipment of the Hudson & Manhattan Railroad (McAdoo Tunnels).—Alton P. Trufant has been elected highway surveyor for Whitman, Mass., in which position he will have control of repairs and maintenance of highways, sidewalks and sewerage systems. He is in business for himself as a civil engineer.—Francis E. Cady has left Washington, and is now in the physical laboratory of the National Electric Lamp Association of Cleveland, Ohio. He is engaged in research work with the director of the laboratory, covering the field of optics and more particularly radiation work.—Angus A. McInnes is engineer for the Metropolitan Construction Com-

pany, whose specialty is concrete construction.—Philip L. Buxton travelled in Europe in the winter of 1908. He is secretary and assistant treasurer of the E. Buxton & Son Company.—E. S. Foljambe holds the position as managing editor for the *Cycle and Automobile Trade Journal* of Philadelphia. Outside of his regular work he has made smoke experiments with a two-cycle glass cylinder engine. He has also experimented with knock-down, silk, tailess, advertising kites.

1902.

F. H. HUNTER, *Sec.*, 75 Park Street, West Roxbury, Mass.

The class was represented at the alumni banquet on January 14 by a much larger delegation than in previous years, the following being present: President Sawyer, Robinson, Whittet, Farmer, Ritchie, Everett, Wemyss, Vaughan, Thurston, Mardick, Westcott, Upham and Hunter. Since that date there has been no gathering of the class up to the present writing, but notices are out in Boston for a bowling party on March 25, and a dinner is planned in New York at an early date. Boston has lost for a season its vice-president, Harry Hooker, he having gone to Salt Lake City to oversee the electrification of railway lines controlled by the Harris interests. His address is 157 North State Street. Salt Lake is becoming quite a centre for '02 men. Stimson is now there with the Rocky Mountain Bell Telephone Company, and Mendenhall has returned thither from Ely, and is again located with the Utah Light and Railway Company. Other classmates have been on the move.—Manley is at 445 Highland Avenue, Bowlder, Col.—Waterman is with the Warren County Lumber Company, Williamsport, Ind.—W. V. Morse has returned to the United States, and is with the S. H. Supply Company, dealers in mining supplies, 2042 Summer Street, Denver, Col.—Seabury has been transferred from Kingston to the central office of the Board of Water Supply at 299 Broadway (Room 1419), where he is assistant to the chief engineer. —Galaher is again with Stone & Webster, and Shedd is back with J. R. Worcester & Co., 79 Milk Street, Boston.—McBurney reports his address as University Club, 5th Avenue and 54th Street, New York City.—McNaughton, Raymond and Lawrence, of Portland, Ore., are the architects for Whitman College at Walla-Walla, Wash. McNaughton's son, Boyd McNaughton, was reported in the last REVIEW, but the date given for his birth

was incorrect. Oct. 6, 1908, is the day that should have been mentioned.—Robert Temple Clapp arrived at the home of Clifford B. Clapp on Oct. 3, 1908, while Elise Erskine Stillings, who was born on Jan. 16, 1909, is the youngest member of the class reported to date.—The record in this line, however, falls to Lewis, whose fourth daughter, Patricia, born on Dec. 24, 1907, has but recently been reported at class headquarters.—Chalifoux was married in Birmingham, Ala., last January, but unfortunately the particulars have not yet reached your secretary. Others are intending to join the majority soon, for Joseph Philbrick's engagement to Miss Clara B. Smith, of Riverside, Ill., is announced; and Brainerd is engaged to Miss Mildred Lighthipe, of Orange, N.J.—Other class items: "Dimmy" Bartlett is now located in New York, his residence being 1285 Dean Street, Brooklyn.—Mrs. May (Best) Sexton's address is Mount Pleasant, Halifax, N.S.—C. W. Adams is with the American Radiator Company, 1342 Arch Street, Philadelphia.—Kimball's address is Glen Osborne, Pa.—McCarthy is with the Potosi Zinc Company, Las Vegas, Mex.—A. T. Nelson is at Portland, Ore., his headquarters being 1120 Board of Trade Building.—Bayard William Mendenhall, Jr., born Dec. 18, 1908, on the thirtieth birthday of his father.—Otto C. Thanisch died on the 24th of March.

1904.

R. A. Wentworth, *Sec.*, Saylesville, R.I.

M. L. Emerson, *Res. Sec.*, 161 Devonshire Street, Boston, Mass.

H. W. Stevens was in charge of an '04 dinner at the Union on February 24. Although it was a terrible night, there were fourteen men out. Of course the June reunion was the principal subject discussed. The reunion committee broached several plans, which were considered in detail, the men being enthusiastic in their support of the committee's work. It was thought inadvisable to attempt any extension of the reunion program in the shape of an excursion or camping trip. The distinctive features which have been developed by our reunion committee will be explained in a notice to be sent to all men who have ever been of 1904. This notice will request certain statistics and certain further assistance, which, I hope will be promptly and cheerfully furnished. It must be remembered that the majority of our classmates seldom see other '04 men, that their Technology loyalty and class spirit are likely to be dulled by such isolation. We are asking you to arouse this spirit by writing to the men whom you can influence. This is your op-

portunity to boom the reunion and to do your part in making the '04 representation worthy of our class.—The Boston crowd will have another dinner early in April.—After nearly three years at Holyoke, Mass., Hiller has returned to Boston as an instructor in the Mechanical Engineering Laboratories.—Llewellyn Bixby, writing from Long Beach, Cal., says:—

I was up in Seattle in January, and tried to locate Porter, but couldn't. I haven't laid eyes on an '04 man for about four years. Hope to be back in June, but can't tell yet whether I can or not. Since leaving Tech, I have done my duty by having a girl, Aug. 2, 1905, and a boy, July 30, 1908. Being married before going to Tech, I had a flying start on the rest of the fellows.

—Carl King's "eldest son," Albert Dunning King, was born December 12.—Bouscaren will be married in Tampa, Fla., on April 22, to Miss Ethel Trawick. They are planning to start immediately after on a three months' trip abroad.—Dave Elwell has been for nearly three years on the electrification of the New York division of the New Haven Road, and is enthusiastic over the work which the Westinghouse people have done there. Though his present address is 7 Fairview Place, New Rochelle, N.Y., the approaching completion of the work renders uncertain his future location. On December 31 his engagement was announced to Miss Mildred B. Kellock, of New Rochelle.—A letter from Todd, headed "Portland, Me.," says in part:—

In reply to your request for news will have to plead a lack of any startling material. My history is covered by the statement that I have been one of the Portland Company's electrical engineers from October, '04, to date. The company cannot be counted as a large concern, as only from two hundred and fifty to six hundred men are employed; but a great variety of engineering feats are put up to the engineering department. We are machinists, marine and electrical engineers, boiler makers and foundrymen, not to include a few other small departments, as agents for Knox automobiles and garage operators on the side. My specialties are elevator controllers and the Chapman electric neutralizer. The latter device is the only absolutely or even passably successful scheme yet devised for neutralizing static electricity in light materials where its presence is undesirable. As the idea was conceived only a few weeks before my connection with the company, I feel as though I had grown up in the business. My first two years here included considerable travelling, but of late I have been able to avoid all but frequent trips to Boston and other near-by points.

—Tripp (II.) was married to Miss Trixie Hannah Liverpool in Boston on January 9, and is living at 19 Concord Square.—Weymouth announces a seven-and-a-half pound addition to his

family on December 30,—Edward Adams Weymouth. His address is Box 286, Hudson, Ohio.—Underhill writes, "Just returned from a three weeks' trip to the City of Mexico, but, did not have a chance to look up any Tech men."—Leyland Whipple is chemist and bacteriologist for the Water Department, Bangor, Me.—F. N. Bull is with the Regina Mining Company, Webb City, Mo.—Evans' card reads, "Aero Pulverizer Company, 90 West Street, New York, Wm. A. Evans, Manager."—C. S. Sperry is studying at the University of Colorado. His address is 1146 Euclid Avenue, Boulder, Col.—At a recent dinner of the M. I. T. Biological Society, Selskar Gunn, health officer of Orange, N.J., spoke on "Trials and Tribulations of a Health Officer."—Nyce writes from Sacramento, Cal.:

Your request for news concerning my many jumps must wait for a reply until I land long enough in one spot to get my breath. If such a condition ever arrives, I shall weary you with a whole pad of paper. The excessive long rains, with the necessary high rivers and washouts, are holding me here. The rivers have been within nine inches of the tops of the levees of this town.

—Under address of 201 Victory Avenue, Schenectady, N.Y., Selby Haar writes:—

I had a curious experience not long ago. I answered a telephone call, and the voice at the other end said he was Haraden. He is transferred here from Lynn. He looks just the same. Pendergast was here in the summer. He is an engineer in the Reclamation Service, and was inspecting some material. My old original drill-master, G. W. Sanborn, also ran in here one day last summer. He is an insurance inspector. He had seen Captain Curtis not long before that. I presume that you know that Robert Palmer married a lady from this city. Not having any more news, I must close now, but shall shake hands with you at the reunion in June.

Haar is not the only man who mentions the great reunion. Nearly every letter for months has referred to it, expressing the intention of the writer to surely come. It is the men who do not write me that need following up.—Mert Emerson has designed and built a new house in Braintree, Mass., which he occupied in December.—Wonders do not cease. On the street in Saylesville I met the other day an '04 man, Willard Chandler, who was here on an inspection for the Associated Factories Mutual Fire Insurance Company of Boston. He is married, with a home in Somerville, but is away from Boston most of the time, though on his nearer assignments he gets home at night.—Since Magee's death Rowe has formed a new partnership for the continuation of his architectural practice at 161 Devonshire Street, Boston. His new associate is Henry F.

Keyes (IV.), '04.—W. T. Wilson (I.), was married December 24 to Miss Valeria Inez Merrill at the Cathedral of St. John the Divine, New York. Wilson is in the designing department, Board of Water Supply, New York.—Edward W. White is with the A. C. Lawrence Leather Company, Peabody, Mass.—Notices have been returned from W. U. C. Baton, R. P. Bellows, C. R. Cary, P. D. Hoard, A. H. Kudlich, C. W. Paddock and David Sutton. Notification to the secretary of the present addresses of any of these men would be much appreciated.—New addresses are: J. McF. Baker, 1285 Dean Street, Brooklyn, N.Y.—A. W. Bartlett, 31 Wycombe Avenue, Lansdowne, Pa.—K. M. Baum, care Vermont Copper Company, So. Strafford, Vt.—A. W. Bee, 218 Woodlawn Avenue, Hartwell, Ohio.—B. Blum, Avon, Mont.—L. M. Bourne, 820 Nostrand Avenue, Brooklyn, N.Y.—J. F. Card, 911A West Silver Street, Butte, Mont.—L. C. Clarke, Jr., 382 East Ontario Street, Chicago, Ill.—E. L. Clifford, 614 Greenleaf Avenue, Wilmette, Ill.—J. E. Cunningham, Beacon Chambers, Boston, Mass. —J. S. Currier, Naval Torpedo Station, Newport, R.I.—F. H. Davis, Southern Pacific Ferry Landing, New Orleans, La.—C. J. Emerson, 251 Causeway Street, Boston, Mass.—Halsey French, 619 East 17th Street, Brooklyn, N.Y.—L. T. Howard, New York Barge Canal, Schuylerville, N.Y.—A. Y. Hoy, Box 1827, Spokane, Wash.—G. E. Kershaw, 16 Castle Rock Street, Dorchester, Mass.— J. D. McQuaid, 13 East 17th Street, New York—R. D. Mailey, 20 Howard Street, Lynn, Mass.—R. S. Phillips, 2043A E Street, Granite City, Ill.—M. H. Schwartz, 49 South Sacramento Boulevard, Chicago, Ill.—Grant S. Taylor, 8 Garden Place, Brooklyn, N.Y.

George M. Magee, of the Class of 1904, died at Wenham on the 7th of February, 1909. A form of tuberculosis was the cause of his death.

He was born in Chelsea in 1883, attended Hopkinson School, Boston, and entered the Institute in 1900, graduating from the Architectural Department in 1904. He returned for a Master's degree, which was awarded him in 1905.

In October, 1906, he married Miss Helena Buhlert, of Wenham.

In 1907 he became a member of the firm of Magee & Rowe, architects.

Through his good fellowship and his sincere and generous nature he won the respect of his classmates and all those who knew him.

1905.

GROSVENOR D' W. MARCY, *Sec.*, 246 Summer Street, Boston, Mass.

The response to the letter telling of the '05 reunion plans was very general, as is shown by the list given later of those who replied that they will surely or probably be here in June. The indications are strong that '05 will have a splendid turning out, and that the camp at Newburyport will be crowded. This is as it should be, for it is our first big reunion, and '05 always did—well, perhaps we'd better not talk about that here, for we do not want to make any other people feel bad. But do not get the idea that it will do to leave it to that. We've got to work as a class for this reunion, just as we did for Field Day and some other things. All the letters and notices the secretary could send out in a year will not take the place of your writing your friends that you are going to be there, and hope they are, too. And *now* is the time to do it. It is a sure proposition that being here in June will add four years to any real '05 man's life, for, after being at camp and going through the grand line-up of stunts of the reunion proper, you cannot possibly feel any older, and probably not as old, as when you did or didn't get your degree. The general spirit is voiced by our Buffalo correspondent as follows: —

> Tech bunch in Buffalo very enthusiastic about reunion. Plan to arrive by special Pullman, if one with sufficient capacity for liquid baggage can be obtained. If not, have local option on Standard Oil tank car, with pipe line to Pullman.

Several are coming, if it takes a leg. Billy Sneeringer expects it to take a ligament, and is ready to risk a lung and a bank account. Bill Motter thinks he could walk it, and would start now if he was not tied down to a job in New Mexico. He has hopes for June, however. Sprague is coming, if he has to swim down the Merrimack from Haverhill. To these we would offer a word of caution. The most distant man who may be able to come is J. C. Eadie, from Castletown, Isle of Man, England. Leonard Bushnell, from Seattle, and Charlie Johnston, from Mexico, will also have pretty long trips. Charlie writes that Mrs. Johnston is a silent partner to the reunion plans, and he does not see how he can help coming. He has been promoted to a larger mine, and is now superintendent of the Reforma Mines, Cuartro Ciénegas, Coahuila, Mexico. He is thirty-five miles from the railroad and one hundred miles from the nearest town, so sometimes the four white people there, the book-keeper,

doctor, Mrs. Johnston, and Charles find it a bit lonesome.—George Hool is professor of civil engineering at the State University of Oklahoma. He is teaching eighteen different subjects, seven of which last through the year, so he keeps pretty busy, and has some outside work, too. He hopes to be here in June.—Robert C. Cutting writes as follows:—

Most fellows get their vacations in the summer time, but, alas! we who work for Uncle Sam, improving the Ohio River, have to take our summer vacations in the winter, and it requires a good imagination to thoroughly enjoy Boston with the mercury almost out of sight.

I wish very much that I could be around in June, and see all the old fellows of '04 and '05, but I fully expect to be leading a very strenuous life about that time. I am in local charge of the construction of Lock and Dam No. 26, Ohio River, a million-dollar project; and, as the government proposes to do the work by hired labor instead of by contract, I will be having a merry time here next summer, plenty of work and plenty to worry about. I like it all, though.

This is rather an isolated place. It cannot be called a town. Gallipolis, Ohio, is eight miles away, and Wheeling almost two hundred.

McCain ('06), is working in the district office in Wheeling. Tech men in general are well thought of by the officers of the corps of engineers, so I have found. I was at West Point about a year ago visiting one of them, and a number of the professors there spoke very highly of the Institute. They even spoke of the advantage of sending cadets assigned to the engineer corps to take a special course there, as in the case of the Annapolis men taking the Naval Constructors' Course.

If I cannot be at the reunion in body, I sure will be there in spirit. With the best wishes for a good time and my regards to all the fellows.

—E. H. Lorenz says: "Am going abroad for the summer, and expect to be in Switzerland just then. Would give up a week of that for the reunion, though, but can't afford to bust up the whole trip. Wish it was any other year. That camp looks just great."—Joe Daniels comments on the card sent out as follows: "This statistical habit together with this Græco-Roman hold-you-fast ballot, almost leads one to believe that the Young Turks are in control. You can't say 'no,' or you're a shyster, you can't say 'yes' without reproving yourself for lying, shall I say?" However, Joe says "probably."—Ned Jewett is in Houston, Tex., with H. L. Stevens Company. Unless the unexpected happens, he will undoubtedly be here in June. He reports that F. P. Paine is in that city with the Otis Elevator Company, and is installing elevators in two buildings which Ned's people have under construction.—"Chink" Moorehead is also with H. L. Stevens Company in Atlanta, Ga. His address is

63 N. Forsythe Street.—Roy Lovejoy has gone on a trip to Panama, and thence to California, but hopes to be back in time to bring his auto up to camp.—Sammy Seaver is at Claremont, N.H., with the Sullivan Machinery Company.—E. E. Woodbury is with the Standard Underground Cable Company, Pittsburg, Pa.—David Collins is on the engineering corps of the Pennsylvania Railroad, building the Sunnyside Yard at Woodside, Long Island, N.Y. He reports the possession of two children, and asks if that is not the record, apparently not knowing that Jim Barnes has that secure.—Bob Turner is a member of the law firm of Kaan, Luce & Turner, 50 State Street, Boston. Last year he was manager of Mr. Luce's campaign for the Republican nomination for lieutenant-governor, which was a very interesting and hotly contested fight.—Bob Farrington also announces that he has opened an office for the general practice of law at 8 Exchange Place, Boston.—E. B. Snow is at the Rock Island Arsenal. His address is 1704 5th Avenue, Rock Island, Ill. —Fred Goldthwaite has taken the New England agency of the Phœnix Iron Works Company of Meadville, Pa. They make engines, boilers, flues, stacks, etc. His address is 115 Central Street, Peabody, Mass.—C. E. Gage is back at Culebra, Canal Zone, and is working with Jack Flynn for a boss.—E. Gordon Bill is teaching in Yale University.—J. H. Morse is a member of the executive committee of the Eastern Manual Training Association, with headquarters at the Primary Industrial School, Columbus, Ga. —Harry Donald is with H. D. Edwards & Co., mill, railroad and vessel supplies of Detroit, Mich.—Jules Barnd is president of the National Mining Stock Exchange of Marion, Ohio.—Sid Strickland writes from Paris, where he is studying at the École Nationale des Beaux-Arts, that he will not return for another year. He says he is up to his ears in work, which is unending, lasting seven days a week, day and night. He didn't work like that at the 'Stute.— A. J. Lowndes is head of the Lowndes-Mitchell Engineering Company, consulting-engineers and contractors, 500 Law Building, Baltimore, Md.—Hallet R. Robbins has resigned as assistant engineer in Department of State Engineer and Surveyor, and is now associated with Alexander Potter, consulting engineer, 143 Liberty Street, New York. His engagement to Miss Florence Dench, of Princeton, Mass., is announced.—The engagement is announced of Miss Gladys Poole, of Weymouth, Mass., and Charles Leavitt.—Herbert M. Wilcox married Frances H. Jaynes, of East Orange, N.J., on March 6. Wilcox is with the Skyland Hosiery Company, Tryon N.C.— Mr. and Mrs. F. O. Sprague announce the birth of Miss Elizabeth Sprague on March 5.—Mr. Bernard Faymonville, of San Francisco,

wrote the secretary that his son, Leroy, died in the city of Hermosillo, N.M., in January of last year. At the time of his death he was manager of the Electric Light and Power Plant in that city. The secretary wrote Mr. Faymonville, assuring him of the sympathy of the class in his loss.—The engagement of Percy G. Hill and Miss Alice H. Fenton, of New Haven, Conn., was announced on February 22.—A. H. Smith had a boy born on October 31, named Richard Brewster Smith.—Leigh A. Thompson, who has not been heard from before, reports his marriage on Nov. 28, 1907. His address is 452 Merrimack Street, Manchester, N.H.—Peet Bixby is still single, and is with the Erie Railroad at Meadville, Pa. He says there are eighteen churches and twenty-six saloons in that town, and that he patronizes the churches sometimes.—For news in Baltimore, Walter Clarke refers to Ecclesiastes, latter part of verse 9.—Willard Simpson reports that enthusiasm is boiling in Texas for the reunion, and that he is coming or bust. He is practising as a structural engineer in San Antonio, and has just finished two large buildings and has a lot of work on hand.—The midwinter dinner, held at the New Union on February 20, was just a small sample of what the reunion will be like. There were twenty-four men present, and every one got filled up with broiled chicken and enthusiasm.–Ros Davis, who came up from Elizabethport, N.J., revived Simon Pure Brass and Jack Tar of the Good Ship Spy in a way that brought tears to the eyes of many. With Prescott at the piano and a quartet of Davis, Seaver, Coffin and Folsom, everybody joined in and learned the new songs in good style, and sang the old ones as '05 never did before. The plans for the camp at Laurel Hill were discussed enthusiastically. About fifty men have asked for provisional reservation. It is an ideal spot, and we ought to have the time of our lives there. Folsom, Perkins and Coffin are the committee in charge. Plans are going forward in good shape, but there is not space to describe them here, and a special letter will be sent to all who have replied to previous letters. The following list gives all those who answered that they will probably or surely be here in June. If your friends are there, write that you are coming, too. If they are not there, write them and find out why. A. H. Abbott, Box 111, Pittsfield, Mass.; C. Robert Adams, 23 Burr Street, Jamaica Plain, Mass.; Roy H. Allen, 8 St. Botolph Street, Boston, Mass.; C. A. Anderson, 238 Beach Street, Revere, Mass.; Court W. Babcock, Tech Chambers, Boston; William G. Ball, 5 Summit Avenue, Winthrop, Mass., Waldo A. Barber, 21 Gardner Street, Allston, Mass.; Jules V. Barnd, Marion, Ohio; G. M. Bartlett, 63 Fernwood Road, Boston; Robert S. Beard, Warwick, N.Y.; A. F. Belding, Joplin, Mo.;

Frederick G. Bennett, Babylon, L.I., N.Y.; William P. Bixby, Box 364, Meadville, Pa.; Charles E. Broad, 53 Commonwealth Avenue, Chestnut Hill, Mass.; Walter S. Brown, Brimmer Chambers, Boston, Mass.; Henry A. Buff, 23 Cheshire Street, Jamaica Plain, Mass.; Walter Burns, Doughty House, Millville, N.J.; Leonard T. Bushnell, 208 Columbia Street, Seattle, Wash.; C. A. Butman, Clark University, Worcester, Mass.; Robert Keep Clark, 82 Michigan Avenue, Chicago, Ill.; W. A. Clarke, 307 W. Hoffman Street, Baltimore, Md.; Ed. M. Coffin, New England Bureau United Inspection, 71 Kilby Street, Boston, Mass.; Richard V. Collins, Good Roads Office, Weighlock Building, Syracuse, N.Y.; Gorham Crosby, 49 Wall Street, New York; Carroll C. Curtis, 137 Milk Street, Boston; Carl E. Danforth, Bangor, Me.; Joseph Daniels, Lehigh University, South Bethlehem, Pa.; Philip G. Darling, University Club, Bridgeport, Conn.; Roswell Davis, 106 Clinton Avenue, Newark, N.J.; Walter G. Eichler, 55 Jackson Street, Lawrence, Mass.; Frank S. Elliott, 313 Broad Street, Lynn, Mass.; Robert D. Farrington, 8 Exchange Place, Boston, Mass.; Andrew Fisher, 186 Lowell Street, Manchester, N.H.; Robert M. Folsom, Boston Consolidated Gas Company, Everett, Mass.; George Fuller, 83 Adams Street, Rochester, N.Y.; R. S. Gardner, care of Massachusetts Institute of Technology, Boston; A. C. Gilbert, 254 Arlington Street, West Medford, Mass.; Luther Elmer Gilmore, Branford, Conn., P.O. Box 521; Fred W. Goldthwait, 115 Central Street, Peabody, Mass.; William S. Gouinlock, Warsaw, N.Y.; C. H. Graesser, Wallingford, Conn.; Fred W. Guilford, 205 Lincoln Street, Boston; Charles W. Hawkes, 79 Brook Street, Pawtucket, R.I.; Edgar Logan Hill, P.O. Box 553, Worcester, Mass.; T. E. Hinkley, 57 Deering Street, Portland, Me.; William G. Housekeeper, 3508 Baring Street, Philadelphia, Pa.; Willis F. Harrington, Barksdale, Wis.; Charles H. Johnson, 176 Federal Street, Boston; Charles W. Johnston, Mina Reforma, C. Cienegas, Coah., Mexico; Gilman B. Joslin, 46 Burroughs Street, Jamaica Plain, Mass.; Henry H. W. Keith, C. & R. Department, Navy Yard, Washington, D.C.; H. W. Kenway, 19 George Street, Newton, Mass.; Maurice B. Landers, Patent Office, Washington, D.C.; C. Arthur Lord, 49 Westminster Street, Providence, R.I.; R. H. W. Lord, Gorham, Me.; J. S. Loughlin, 1216 4th Avenue, Rock Island, Ill.; Roy F. Lovejoy, Lowell, Mass.; H. J. Macintire, 135 Marshall Street, Brooklyn, N.Y.; R. W. McLean, East Bridgewater, Mass.; Alden Merrill, 74 Litchfield Street, Torrington, Conn.; Robert W. Morse, 49 Holbrook Street, Jamaica Plain, Mass.; James C. Pease, Merrimac, Mass.; Grafton B. Perkins, 135 Columbus Avenue,

Boston; Goodale Perry, 141 Milk Street, Boston; Albert G. Prescott, 16 Whitman Street, Dorchester Centre, Mass.; F. B. Bailey, 77 Rockview Street, Jamaica Plain, Mass.; Hallet R. Robbins, 143 Liberty Street, New York; E. G. Schmeisser, 10 Bridge Street, New York; Samuel Seaver, Sullivan Machinery Company, Claremont, N.H.; W. E. Simpson, 310 Alamo National Bank Building, San Antonio, Tex.; Charles E. Smart, Greenfield, Mass.; William F. Smart, Lewiston, Me.; Edwin B. Snow, Jr., 1704 5th Avenue, Rock Island, Ill.; W. L. Spalding, 1 Austin Street, Buffalo, N.Y.; F. O. Sprague, rear 208 Summer Street, Boston; R. P. Stebbins, 862 South Street, Roslindale, Mass.; Samuel S. Stevens, 73 Grand Street, Newburg, N.Y.; Henry J. Stevenson, 41 Central Avenue, Waterbury, Conn.; G. S. Tower, Room 61, 31 Milk Street, Boston, Mass.; Le B. Turner, Geneva, Ill.; Robert N. Turner, 50 State Street, Room 48, Boston; Waldso Turner, 1174 Frick Building, Annex, Pittsburg, Pa.; Maurice E. Weaver, 2501 Wisconsin Avenue, Washington, D.C.; Henry A. Wentworth, 160 India Street, Boston; Miss Mildred Frances Wheeler, 23 Leyfred Terrace, Springfield, Mass.; Horatio Whiting, 65 W. 104 Street, New York; Kilbourn Whitman, Jr., Mt. Morris, N.Y.; James Whitmore, Lock Box 395, State College, Pa.; H. L. Whitney, Box 995, Beverly, Mass.; Ellis G. Wood, Arlington, Mass.; E. Ernest Woodbury, 14 Emerson Avenue, Crafton, Pa.

1906.

GEORGE F. HOBSON, *Acting Sec.*, 164 Holyrood Ave., Lowell, Mass.

I. *On the Part of the Secretary.*

Since January your secretary has devoted the greater part of his time to receiving class dues, paying bills and straightening up the financial affairs of the class, and now he has the pleasure of announcing the class to be entirely out of debt and to have a deposit of nearly $50 in the bank. While this is very encouraging, classmates are urged to pay up their dues immediately, if they have not done so, since the expenses for the big reunion in June will necessarily be very large. In regard to the reunion, the outlook for a large delegation of 1906 men is splendid. The secretary has received a great number of letters from fellows all over the country, saying that they expect to be present upon this occasion. On March 3, 1909, the executive council held a meeting, and decided that a committee of five should be appointed to look after the interests of the

class during the time of the reunion. This committee will be appointed very shortly. The executive council also appointed a nominating committee to nominate class officers for the coming year. The nominations are as follows: trustee of permanent fund, Stewart Coey and Percy Tillson (term expires in 1912); member of executive council, J. M. McKernan and G. F. Hobson (term expires in 1912); secretary, F. A. Benham and C. E. Tucker (term expires in 1911); assistant secretary, R. J. Barber and S. L. Ware (term expires in 1911).

The attention of the class is called to Article VIII., Section 1, of the constitution, which reads as follows: "Should ten or more members of the class wish to nominate a candidate for office, they may forward name of said candidate, endorsed in writing by at least ten, to the nominating committee, who shall place name of candidate upon ballot." Nominations will be forwarded by the secretary to the nominating committee any time previous to April 15, 1909.

II. *Class News and Letters.*

The secretary received a short note from E. P. Cutter, who is now located in Ensley, Ala.—M. T. Lightner is with the Chicago & Alton Railroad, Bloomington, Ill.—E. D. McCain has gone into the real estate business in Allegheny, Pa., therefore it goes without saying that he is prospering splendidly.—Percy Tillson writes as follows:—

> The Philadelphia Club had a smoker on the 12th of December, and, of an attendance of twenty-five, eleven were 1906 men. How is that for the '06 Quakers?

—We also received a nice letter from W. E. H. Mathison with the following items of interest:—

> I became interested in the talc belt of northern New York, secured backing for the Uniform Fibrous Talc Company, and became a director and general manager. Our mine shaft runs down eighty feet in fine talc all the way from the surface, and insures a wonderful property. In the spring we are to build a concrete dam, a concrete mill run by electric power and hope to do business by August of this year.

—W. F. Englis' new address is 2023 Land Title Building, Philadelphia, Pa.—Fay Libbey writes that he is at the Old Vulture Mine, Wickensburg, Ariz., and is in a desert sixteen miles from a railroad, but likes that very much.—"Pete" Barnes is still with the New York Board of Water Supply, but runs down to New York occasionally when the water supply runs low.—Laurence Blodgett says that he will surely be on for the big reunion, and we hope that many others

are making similar plans.—"Dick" Beers' excuse for not attending the semi-annual dinner is hereby submitted:—

Sorry that I can't be with you at the dinner, but "my wife won't let me." Remember me to all the deck hands.

—"Herb" Whiting has succumbed to the attractions of the "Gay White Way," and gone to New York with the Holophane Company. —"Dick" Polhemus writes that he is in charge of the mining work at Carthage, Mo., and is rooming with L. N. Bent.—"Bunny" White writes that the Philadelphia bunch intends to send up a good delegation in June.—C. F. W. Wetterer writes from Dallas, Tex., that he has met several Tech men down there, but that they were not of 1906.—A. A. Turner bemoans the fact that he has got to usher in the New Year from the mountains of Beatty, Nev.—"Kirk" Chase is now working for the American Smelting and Refining Company in Denver, Col.—Edwin Frank is abroad, and spent one evening with James Kane, who is studying in Paris.—"Jimmy" Banash sends the following news from the Windy City:—

I attended the alumni reunion of the North-western Alumni Association of M. I. T. on Nov. 28, 1908, at the University Club. Johnny Hand was present with his orchestra, and we had a rather large time. I suppose you know that C. D. Richardson is in charge of our Pittsburg office, National Fire Protection Association.

—J. F. Norton is teaching chemistry at the University High School in Chicago and at the same time studying for an advanced degree. "Bill" Lincoln writes that he is located on the Flathead Indian Reservation, where the United States government is laying out irrigating systems for the noble redman, who, he firmly believes, would rather that they should install a brewery. We believe that such an institution would meet with Bill's enthusiastic approval also.—Our last correspondent is Keleher, who is writing from Lima, Peru, which town has not had a rain-storm for fourteen years. Keleher writes, "Thank God, I am not selling umbrellas."—The class will be very sorry to learn of the death of George F. Hunt, and the following testimonial has been drawn up by the undersigned committee:—

Whereas, it has pleased God in his infinite wisdom and goodness to call from his place among us our beloved classmate, George F. Hunt, and whereas, through the death of our classmate, the Class of 1906 has sustained the loss of a most valued member and the Massachusetts Institute of Technology the loss of a most valued alumnus, be it

Resolved, That the Class of 1906 extend to the immediate family our heart-

felt sympathy and condolence in their bereavement, and be it further *Resolved*, That a copy of these resolutions be sent to his immediate family, that a copy be put upon the class records, and that a copy be sent to THE TECHNOLOGY REVIEW for publication. (Signed) George E. Burnap, John J. Donovan, Charles A. Howard, *Committee*. Dated, Feb. 1, 1909.

1907.

ALEXANDER MACOMBER, *Sec.*, 83 Newbury Street, Boston, Mass.
BRYANT NICHOLS, *Res. Sec.*, 138 Fremont Avenue, Everett, Mass.

I. *General Notes.*

On the occasion of the annual alumni dinner, held in January at Horticultural Hall, '07 was well represented, and an evening of great enthusiasm was enjoyed. Those present from '07 were Laurie Allen, Chase, Lee, Macomber, MacGregor, Norton, Nichols, Wonson, Thayer, Walker, Woodward, Waters, Squire, and Tashjian. Just now preparations for '07's share in the big reunion this June are before us, and we expect to make this an occasion to be long remembered. Letters have already been sent out to the fellows, and a hearty response is hoped for. On March 6 the fellows in the vicinity of Boston got together for a dinner at the Union. Thirty-six men were on hand, and the guest of the evening was I. W. Litchfield ('85), editor of the REVIEW. Mr. Litchfield gave us a characteristic talk about the plans for the All-Technology Celebration this June. After dinner informal discussion of plans for this event resulted in appointment, by President Robbins, of a reunion committee, consisting of the secretaries and Laurie Allen, MacGregor, Charlie Allen, and Don Robbins. It was also decided to hold monthly dinners till June to hear the progress on the reunion plans. These will take place at the Hotel Marliave, Boston, on the first Fridays in the month. Any '07 man in town on that night is hereby warned to put in an appearance. At the suggestion of Mr. Litchfield a committee representing '07 was appointed to look up fellows considering a technical education, and put them in communication with the Institute. In this way Tech can secure as students select men,—the class of men who are going to amount to something in later years. This is but a small part in the campaign which is now being waged for a broader and greater Tech. If any one knows of fellows of this type who contemplate technical education, he is urged to communicate with the authorities. Later in the evening several of the fellows told their experiences during the past

year. Sam Marx's tale of his experiences abroad took the cake, however, as one would naturally expect.

II. *Personal Notes.*

We have several more names to add to the benedict list. W. I. Keeler was married on Feb. 23, 1909, to Miss Jane Augusta Johnson, of Malden, Mass.—Ralph G. Hudson was also married during February, while news is received of the marriage of R. C. Ashenden (ex-'07), to Miss Grace Chadwick, of Newton Centre, Mass.—The engagement is announced of Miss Elsie Louise Fogg, of Chelsea, Mass., to Bryant Nichols.—The matter of the class baby has been receiving some attention from your secretaries recently, and we believe the honor falls to Oscar Starkweather, who is the proud father of Oscar Allen Starkweather, Jr., born June 30, 1908. Stark always was a good example, and we offer him our congratulations. Bottom's up to "Stark, Jr.," M. I. T. '26 (?).—P. V. Dodge has resigned as class correspondent for the Pittsburg district, on account of his moving to Washington, and C. N. Draper, 40th and Butler Streets, has been appointed to the vacancy.—We note with pleasure the success and prominence of some '07 men: A. G. Labbé is secretary of the Technology Association of Oregon.—Hud Hastings, we hear, is making a name for himself at Bowdoin, where he has charge of the civil engineering course and in addition has done some important work in bridge engineering.—R. A. Martinez is in Havana as engineer in the sewer department.—E. M. Richardson (ex-'07), is with the automobile department of the American Locomotive Company, 1886 Broadway, New York.—John Evans is chief engineer of the Denver City Tramway Company, Denver, Col.—The following is clipped from the Wakefield (Mass.) *Banner:*—

> The friends of Donald Russ have been glad to welcome him to Wakefield this week. He is in this vicinity on a business trip in the interests of the recently organized company known as the Russ Manufacturing Company. The company was incorporated in Delaware with a capital of $100,000, and starts out with very bright prospects. Mr. Russ, a graduate of the Institute of Technology in the Class of '07, has shown himself to be possessed of much executive ability as well as of unusual originality along the line of independent research and laboratory experiments. The output of the new manufactory is to be photo and food gelatines, concerning which Mr. Russ has made some very important discoveries.

Changes in address: F. O. Adams, 849 Camp Street, New Orleans, La.—J. P. Alvey, Jr., 701 Ideal Building, Denver, Col.—R. Brigham, 1111 Park Building, Pittsburgh.—H. N. Burhans, 227 Mc-

Lennan Avenue, Syracuse, N.Y.—W. P. Coffin, 433 Walnut Street, Brookline, Mass.—P. L. Cumings, 41 Atlantic Avenue, Fitchburg, Mass.—L. R. Davis, Kingston, Ohio.—V. H. Dickson, 306 South Jefferson Street, Peoria, Ill.—S. G. Emilio, Dee, Ore.—J. T. Fallon, 52 Broadway, New York.—J. H. Fellows, The Lincoln, Youngstown, Ohio.—R. F. Gale, 84 State Street, Boston.—H. R. Hall, 763 Broadway, Somerville, Mass.—T. C. Keeling, care of Ponce Railway and Light Company, Ponce, Porto Rico.—P. F. Kennedy, 1129 Hamilton Street, Spokane, Wash.—J. H. Link, Y. M. C. A., Akron, Ohio. —H. J. C. Macdonald, Box 130, Phœnix, B.C.—J. M. McMillin, care of Denver Gas and Electric Company, Denver.—H. W. Mahr, care Bowler Brothers' Brewery, Worcester, Mass.—Eugene Phelps, Meeteese, Wyo.—Allen Pope, 3025 15th Street, Washington, D.C. —D. E. Russ, 12 Hone Street, Oil City, Pa.—Tracy Smith, 20 North Church Street, Schenectady, N.Y.—E. E. Workington, 24 Plum Street, Portland, Ore., care of Portland Electric Company. —S. D. Wells, Mead Pulp and Paper Company, Chillicothe, Ohio.—E. F. Whitney, 104 Jay Street, Schenectady, N.Y.— A. G. Labbé, Willamette Iron and Steel Works, Portland, Ore.— A. W. Hull, 131 33d Street, Newport News, Va.—R. E. Thayer, 110 Spring Street, Medford (at M. I. T.)—B. F. Mills, Tacloban, Leyte, P.I.—C. W. Nutter, 3 Sturgis Street, Chelsea, Mass.— R. G. Kann, Pittsburg Plate Glass Company, Pittsburg, Pa.— C. J. Trauerman, Independent Steel and Wire Company, Pittsburg. —R. C. Albro, 683 Atlantic Avenue, Boston.—R. F. Gale, Cage, M. I. T., Boston.—H. W. Hill, treasurer Grip Coupling Company, Springfield, Mass.—R. G. Hudson, 83 Brattle Street, Cambridge. —C. A. Bowen, 43 Gates Street, Lowell, Mass.— A. E. Hartwell, 64 West Rutland Square, Boston (at M. I. T. till June).—Dan C. Loomis, care of Confectionery Machinery Company, Springfield, Mass.—C. R. Lamont, care Cumberland-Ely Copper Company, Kimberly, Nev.—R. E. Keyes, 91 Newbury Street, Boston. —W. F. Kimball, 15 Hillside Avenue, Medford, Mass.—John Mather, Fort Constitution, Portsmouth, N.H.—R. W. Parlin, 74 Lincoln Avenue, Wollaston, Mass.—E. V. Potter, 157 Walnut Street, Somerville.—Sam A. Marx, 236 Newbury Street, Boston.— L. Wetmore, 15 Magazine Street, Cambridge, Mass.—Chester M. Butler, 36 Sherman Avenue, Glens Falls, N.Y.—O. L. Peabody, care of Forbes Lithograph Company, Revere, Mass.—R. G. Woodbridge, Jr., care of E. I. du Pont Powder Company, Henry Clay P.O., Del.—F. R. Van der Stucken, care of McClintic Marshall Construction Company, Rankin, Pa.

III. *Letters.*

W. I. Keeler writes under date of January 11. His address is 158 High Street, Hartford, Conn.

For the last year I have been with the General Electric Company at their Lynn plant as an assistant analytical chemist. Have just accepted an advantageous position with the Hartford Laboratory Company, run by C. L. W. Pettee, '97.

—K. W. Dyer wrote on Dec. 11, 1908, from Cromwell, Conn.:—

I resigned my position with the Opaque Shade Cloth Company, Chicago, to come home, so that I might be here to welcome little Osborne Coe Dyer, a lusty ten-pounder, who arrived August 23. If he is not the first son of the Class of '07, I would like to know who is, and his father and I can exchange congratulations. He seemed to take a technical view of things, but as yet we have not decided which course he shall take at the old Institute. There is but little chemical activity in this immediate vicinity, so I am following agricultural pursuits at our home place.

—H. L. Moody writes an interesting letter from United States Geological Survey, Pittsburg, Pa.:—

Since November 1 I have been here with the survey. I am not in the chemical department of the work, but am with the engineers, and just at present am conducting a series of tests on some house-heating boilers. It is very interesting work, . . . and incidentally there is a grand experience to be obtained out of it. . . . January 16 the Pittsburg Association of M. I. T. held a smoker, and got together a very enthusiastic bunch. They are planning for a dinner soon. . . . You can bet your life I am coming back to the reunion in June. . . .

—From England we have a line from Tresnon:—

Thanksgiving Day, 1908.—To-day is Thanksgiving Day, but I have not had my turkey yet (10 P.M.). The reason for this omission will be seen when you refer to my address (16 Gage Street, Lancaster, England). . . . I left Philadelphia on October 26 for home. I cannot tell of anything very exciting happening at present except to say that I am very busy working with my father, mostly keeping houses in good repair. My plans for the future are not yet matured, but I expect to return to the States in the early spring. . . . I shall make an effort to fix my plans, if possible, to be present in Boston in June, 1909.

—From John Frank:—

. . . We had a very successful alumni dinner out here on February 20. The new President made a very favorable impression. He looks like "the goods." Ike Litchfield was one of the main attractions, of course. In speaking of the affairs at Tech, he said that several men were trying for

degrees of M.S. and Ph.D., and some of the coeds were trying for the degree of MAMA. [Laughter and applause.] The '07 men at the banquet were Naramore, Fred Schmidt, and myself. *Schmidt* came out here about a month ago. He is with *Marshall & Fox*, the architects, Chicago. . . . I hope to be there in June.

—From Draper:—

. . . W. W. Karnan has been putting in some very strenuous work for Uncle Sam since last December. He has been gas analyst for the gas producer tests which are running night and day here. One week he works days, and the next week nights. He has taken a week off at present to recuperate, and incidentally to visit the inauguration at Washington.

I met Trauerman last week, and he says he is general utility man, consulting engineer, etc., for the Independent Steel and Wire Company of Pittsburg, but is not crazy over the position, and expects to leave soon for Franklin Furnace, N.J. Since leaving Tech, he has been a globe-trotter, Mexico, Arizona, Colorado and Cobalt being some of his favorite haunts. H. L. Moody is another strong government worker. He is running sixteen hour boiler tests on various boilers with different grades of coal, and seems to be enjoying himself in his profession. He has a cosey little apartment where he spends all of his evenings, and tries to forget he is living in the land of smoke and soot. S. R. Miller is a hustling travelling salesman, and is flitting all over the eastern United States, and having a fine time. He meets a great many '07 men in his travels. Van der Stucken has left Pottstown, Pa., and is now with Roby with McClintic Marshall Construction Company at Rankin, Pa.

—A letter from Dick Woodbridge states he is with the du Pont Powder Company as research chemist in the smokeless powder department. He has already earned the *nom de plume* of "Smokeless Dick, the cellulose king." He is at their plant at Henry Clay P.O., Del., and likes it very much. The girls there are superfine, he writes, and as a mind-broadener they occupy three-quarters of his time.

1908.

JOHN T. TOBIN, *Sec.*, 162 Duke Street, Norfolk, Va.
RUDOLPH B. WEILER, *Res. Sec.*, 26 Brooks Street, Brighton, Mass.

The class committee on arrangements for the reunion in June had its first meeting on March 4. Gerrish, Osborne, Rapelye, Reid and Weiler were present. In the undecided state of the program for the three days of the reunion it was impossible to do any definite planning. The committee elected Rapelye chairman, and ad-

journed to meet again as soon as the main committee had decided upon definite plans for the various reunion exercises. The following have been elected to the supervising committee, as explained in the January REVIEW: J. T. Tobin, J. W. Maxwell, A. G. Place. The cuts in the Senior Portfolio are now ready for distribution, and will be mailed on receipt of fifty cents to Harry Webb, M. I. T., or the resident secretary. The annual dues of one dollar are not coming in very fast. If you have not already done so, please remit the "bone" to the resident secretary.—"Sam" Daddow was married February 13 to Miss Mary Isabel Davenport, of Spruce Hill, Pa. They will be at home after the 15th of April at 933 Pear Street, Reading, Pa.—The engagement is announced of Miss Florence Cole to Arthur E. Bremer. This is the result of Arthur's studying structures at Fred Cole's house last winter.—"Clif" Cochrane has left the International Paper Company, and is now with the Factory Mutual Fire Insurance Company, 31 Milk Street, Boston. —A. W. Heath has left Pierce & Barnes, and is now with Stone & Webster, Boston.—J. G. Reid is with the Stone & Webster Management Association.—E. F. Lyford is back in town since the expiration of his three months' contract with the J. B. Laws Company of Louisiana.—Edward Kloberg is with the Board of Water Supply, City of New York, 299 Broadway, home address 452 East 179th Street.—H. J. Noble was in town last month. He has completed his course at Cornell, and will receive his degree in June. Address 325 Fenn Street, Pittsfield, Mass.—"Bunny" Ames has gone to Buenos Ayres, Argentine Republic.—Bond has left the Stanley Company, and is in the Forestry Service (Wood Preservation), United States Department of Agriculture, Washington, D.C.—"Jim" Burch is with Farley & Loetscher Manufacturing Company, Dubuque, Ia.—D. W. Clark is with the Sullivan Machinery Company, Claremont, N.H.—H. L. Burgess and O. S. Jennings have returned as assistants in electrical engineering.—E. G. Genoud, Jagon Strasse 2, Berlin, N.W. 87, Germany.—Masanao Yendo, Reichstrasse 16, Dresden, Sach., Germany.—H. W. Hoole, 234½ 17th Street, Milwaukee, Wis.—C. S. Colson, 36 East 28th Street, New York City.— B. G. Fogg, Box 313, State College, Pa.—G. A. Abbot, North Dakota Agricultural College, Fargo, No. Dak.—R. A. Angus, 161 West 105th Street, New York, N.Y.—R. B. Arnold, care of Kentucky Tobacco Product Company, Richmond, Va.—Warren S. Baker, Adirondack Cottage, Saranac Lake, N.Y.—W. J. E. Barcus, Garfield Smelter, Garfield, Utah.—C. C. Barker, 1361 Osgood Street, North Andover, Mass.—P. B. Barrett, 54 Lothrop Street, Beverly, Mass.—C. J. Carter, 6 Pine Street, Orono, Me.—R. C. Caryl

Pearl Street, Bridgewater, Mass.—J. H. Caton, 3d, Malalos, Bulacan, Philippine Islands.—J. C. Childs, 4002 Highland Avenue, Kansas City, Mo.—F. S. Cram, S. A. E. House, Orono, Me.—J. F. Curran, Pond Street, Nahant, Mass.—S. L. Davidson, Jr., 1326 Lawrence Avenue, Wichita, Kan.—W. F. Davis, Room 609, 101 Milk Street, Boston, Mass.—D. Dickinson, Jr., 1806 R Street, N.W., Washington, D.C.—C. J. Dore, 40 Howland Street, Boston, Mass. —A. H. Dows, 136 Smith Street, Lowell, Mass.—L. K. Ferry, 104 Howard Street, Pittsfield, Mass.—L. S. Gerould, 512 Rebecca Avenue, Wilkinsburg, Pa.—B. L. Gimson, 20 Glebe Street, Leicester, England.—José Gomez, Bureau of Agriculture, Manila, P.I.— L. F. C. Haas, 41 East Orange Street, Lancaster, Pa.—N. L. Hammond, East Walpole, Mass.—M. C. Hayes, Lewisburg, Pa.—I. G. Hersey, Box G, Hingham, Mass.—C. L. Hussey, 312½ Blackstone Street, Providence, R.I.—Russell T. Hyde, 26 Rue de Fleurus, Paris, France.—A. T. Kolatschevsky, Ex-Palazza Reale, Portici Presso, Napoli, Italy.—J. F. Leary, 120 Merrimac Street, Newburyport, Mass.—Charles L. Lufkin, Central Aquirre, Porto Rico.—J. W. Maxwell, Box 1445, Bisbee, Ariz.—E. W. Moreland, care of D. C. & W. B. Jackson, 84 State Street, Boston.—W. A. Morris, 204 East Main Street, Connellsville, Pa.—C. W. Morrison, 80 Florence Avenue, Revere, Mass.—G. A. Murfey, Altadena, Cal.—G. H. Pierce, 1605 W. Congress Street, Chicago, Ill.—P. R. Powell, Loomis Manning File Company, 828 Land Title Building, Philadelphia, Pa.—E. M. Price, 315 East 10th Street, Kansas City, Mo.—H. M. Richards, care of Mather & Co., 51 Wall Street, New York, N.Y. —Max Rohde, 529 North Wolfe Street, Baltimore, Md.—H. S. Sargent, 127 Prospect Avenue, Revere, Mass.—E. J. Scott, 1 Cushing Street, Lowell, Mass.—H. R. Sewell, Electric Light and Power Company, Galveston, Tex.—S. T. Silverman, 111 Aisquith Street, Baltimore, Md.—A. C. Sloss, Jr., care of Stone & Webster, Boston. —C. H. Spiehler, 255 West 92d Street, New York, N.Y.—L. S. Stone, 59 Fort Avenue, Roxbury, Mass.—E. C. Story, 10 Cypress Place, Lynn, Mass.—J. R. Tabor, Binz Building, Houston, Tex.— F. E. Towle, 91 Vernon Street, Waltham, Mass.—W. A. Tracy, South Coventry, Conn.—H. E. Walker, 1105–6 Stock Exchange Building, Chicago, Ill.—J. W. Wattles, Canton Junction, Mass.— L. S. Weeks, 72 Granville Avenue, Malden, Mass.—George D. Whittle, chief engineer's office, M. K. & T. Railway, Dallas, Tex. —V. C. Blackwell, Technology Chambers, Boston, Mass.—Miss Louise M. Bosworth, 2 Acorn Street, Boston, Mass.—E. I. Williams has won the three-year travelling scholarship in architecture, the Prize of Rome. A detailed account will be found elsewhere in the

REVIEW.—Al Place is in Seattle, Wash., 510 9th Avenue. He is with the Seattle Electric Company. He writes:—

They hustle in this burg worse than they do in New York. It's "bing," and you're off in the morning, and then "thump," and you hit the pillow at night.

—"Spike" McGuigan writes, "Since escaping from the institution for the alleviation of adolescent ignorami and three et ceteras, I have been accepting money from the Michigan Central." He says that Mort Burroughs, Mike Dennedy and George R. Cooke are in Detroit. Tommy Orr is out in Kansas City, working for J. A. Waddell, a big bridge engineer.—George Glover is at Lima, Ohio, working for the Shea Locomotive Company.—Bowman writes from Chicago:—

While I haven't very much to say, I shall try to get that out of my system. There are still a few of us '08 fellows in Chicago. C. C. Kinsman, who was with the Metropolitan Elevated Railway Company, has resigned and gone to Decatur, Ill. I think he is now with a car truck manufacturing company. George H. Pierce is with the Metropolitan Elevated. He was married Christmas, and is now keeping house on the West Side. L. B. Hedge also is one of those who has concluded that Chicago is too large a city to be conducive to the happiness of a single man. His bachelor days ended January 18. R. W. Davis came through here December 20. He was looking well. Looks like the Ohio River water of Cincinnati was agreeing with him. Davis is in the Bullock factory of the Allis-Chalmers Company there.

I was unable to attend the annual dinner of the North-western Alumni Association, February 20.

My own past is soon told. I am still in the engineering department of the Commonwealth Edison Company, 139 Adams Street.

With best wishes,

D. BOWMAN,
437 East 61st Street.

—The following is a clipping from the *Oasis* (Nogales, Ariz.) of Dec. 5, 1908:—

Last Wednesday morning, the 2d inst., Mr. Ygnacio Safford Bonillas, of Nogales, Sonora, took his departure for the City of Mexico to fill an engagement with the Mexican government in the Corps of Engineers of the Geological Survey of the Republic, carried on under the direction of the Geological Institute of Mexico, whose director is the eminent geologist, Don José G. Auilera.

Mr. Bonillas graduated last June in the Mining Engineering Course at the Massachusetts Institute of Technology in Boston, and at the time he was called to Mexico he was engaged in making a geological study of the Twin Buttes region, with the view of presenting a thesis to the faculty

of the University of Arizona for his Master of Science degree. This work, though interrupted for the present, will be reassumed by Mr. Bonillas at some future time.

The *Oasis* bespeaks for Mr. Bonillas a successful career in the scientific field which he is just entering.—From *The Tech* of March 1, 1909:—

Charles A. Gibbons ('08), who since his graduation has been an assistant in the Mining Engineering Department, left Thursday for Kelvin, Ariz., where he is to enter the employ of a large mining company.

—From *The Tech* of March 3, 1909: "The engagement is announced of William Durant Milne ('08), to Lorna MacLean, Wellesley, '08."

ALUMNI ASSOCIATION

OF THE

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

OFFICERS

President, EDWIN S. WEBSTER, '88 (term expires in 1909).

Vice-Presidents: { ALBERT F. BEMIS, '93 (term expires in 1909).
FRANK E. SHEPARD, '87 (term expires in 1910).

Secretary, WALTER HUMPHREYS, '97 (term expires in 1909).

Executive Committee

THE PRESIDENT, VICE-PRESIDENT, and SECRETARY.
HOWARD L. COBURN, '87 (term expires in 1909).
W. SPENCER HUTCHINSON, '92 (term expires in 1909).
WILLIAM S. JOHNSON, '89 (term expires in 1910).
CHARLES F. PARK, '92 (term expires in 1910).

Nominating Committee

CHARLES T. MAIN, '76 (term expires in 1909).
ALLYNE L. MERRILL, '85 (term expires in 1909).
ANDREW D. FULLER, '95 (term expires in 1909).
HARRY W. TYLER, '84 (term expires in 1910).
EDWARD H. HUXLEY, '95 (term expires in 1910).
FREDERICK H. HUNTER, '02 (term expires in 1910).

Alumni Committee on the School

JOHN O. DEWOLFE, '90 (term expires in 1909).
HENRY SOUTHER, '87 (term expires in 1910).
LINWOOD O. TOWNE, '78 (term expires in 1911).

Trustees of the Alumni Fund and of the Life Membership Fund

FRANK L. FULLER, '71 (term expires in 1910).
EDWIN C. MILLER, '79 (term expires in 1912).
JAMES P. MUNROE, '82 (term expires in 1914).

Advisory Council on Athletics

JOHN L. BATCHELDER, Jr., '90 (term expires in 1909).
J. ARNOLD ROCKWELL, '96 (term expires in 1910).
FRANK H. BRIGGS, '81 (term expires in 1911).

Trustee of the William Barton Rogers Scholarship Fund

ROBERT H. RICHARDS, '68

Walker Memorial Committee

HARRY W. TYLER, '84, *Chairman.*
CHARLES M. BAKER, '78, *Treasurer.*
CHARLES-EDWARD A. WINSLOW, '98, *Secretary.*

ROBERT H. RICHARDS, '68 — THOMAS HIBBARD, '75
EVERETT MORSS, '85 — WILLIAM B. THURBER, '89
JOHN L. BATCHELDER, Jr., '90 — ALBERT F. BEMIS, '93

Term Members of the Corporation

Term expires March, 1910

FREDERICK K. COPELAND
JOSEPH P. GRAY
FRANK L. LOCKE

Term expires March, 1911

T. COLEMAN DUPONT
CHARLES T. MAIN
FREDERICK W. WOOD

Term expires March, 1912

GEORGE W. KITTREDGE
FRANK G. STANTIAL
GEORGE E. HALE

Term expires March, 1913

JAMES W. ROLLINS, Jr.
EVERETT MORSS
ARTHUR T. BRADLEE

Term expires March, 1914

WALTER B. SNOW
THEODORE W. ROBINSON
CHARLES R. RICHARDS

Committee on Publication of the Technology Review

JAMES PHINNEY MUNROE, '82 — ARTHUR AMOS NOYES, '86
WALTER BRADLEE SNOW, '82 — WALTER HUMPHREYS, '97
ISAAC WHITE LITCHFIELD, '85

COUNCIL OF THE ALUMNI ASSOCIATION

Officers of the Association:—

President, EDWIN S. WEBSTER, '88.
Vice-Presidents, ALBERT F. BEMIS, '93, and FRANK E. SHEPARD, '87.
Secretary-Treasurer, WALTER HUMPHREYS, '97.
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Representatives at large:—

For one year.	*For two years.*
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'71, E. W. ROLLINS.	'91, CHARLES GARRISON.
'72, MAURICE B. PATCH.	'92, LEONARD METCALF.
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'86, ARTHUR G. ROBBINS.	'06, GEORGE F. HOBSON.
'87, E. G. THOMAS.	'07, LAWRENCE ALLEN.

'08, H. A. RAPELYE.

Local societies with representation on the Council:—

TECHNOLOGY CLUB OF THE MERRIMACK VALLEY, George Bowers, '75.
TECHNOLOGY CLUB OF NEW YORK, Francis C. Green, '95.
NORTH-WESTERN ASSOCIATION, M. I. T., I. W. Litchfield, '85.
PITTSBURG TECHNOLOGY ASSOCIATION, Warren I. Bickford, '01.
TECHNOLOGY CLUB OF PHILADELPHIA, Percy E. Tillson, '06.
WASHINGTON SOCIETY OF THE M. I. T., I. W. Litchfield, '85.
TECHNOLOGY CLUB OF MILWAUKEE, I. W. Litchfield, '85.

Other local societies that have not yet appointed a representative on the Council:—

Annapolis Society of the M. I. T.
Technology Club of Buffalo.
M. I. T. Club of Central New York.
Technology Club of Central Pennsylvania.
The Cincinnati M. I. T. Club.
Technology Club of the Connecticut Valley.
Detroit Association of the M. I. T.
Technology Club of Hartford, Connecticut.
Inland Empire Association of the M. I. T.
Technology Club of Minnesota.
Technology Club of New Bedford.
Technology Club of Northern California.
Technology Club of Northern Ohio.
Technology Association of Oregon.
Technology Club of Puget Sound.
Technology Club of Rhode Island.
Rocky Mountain Technology Club.
Technology Club of the South.
Technology Club of Southern California.
Vermont Technology Association.

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